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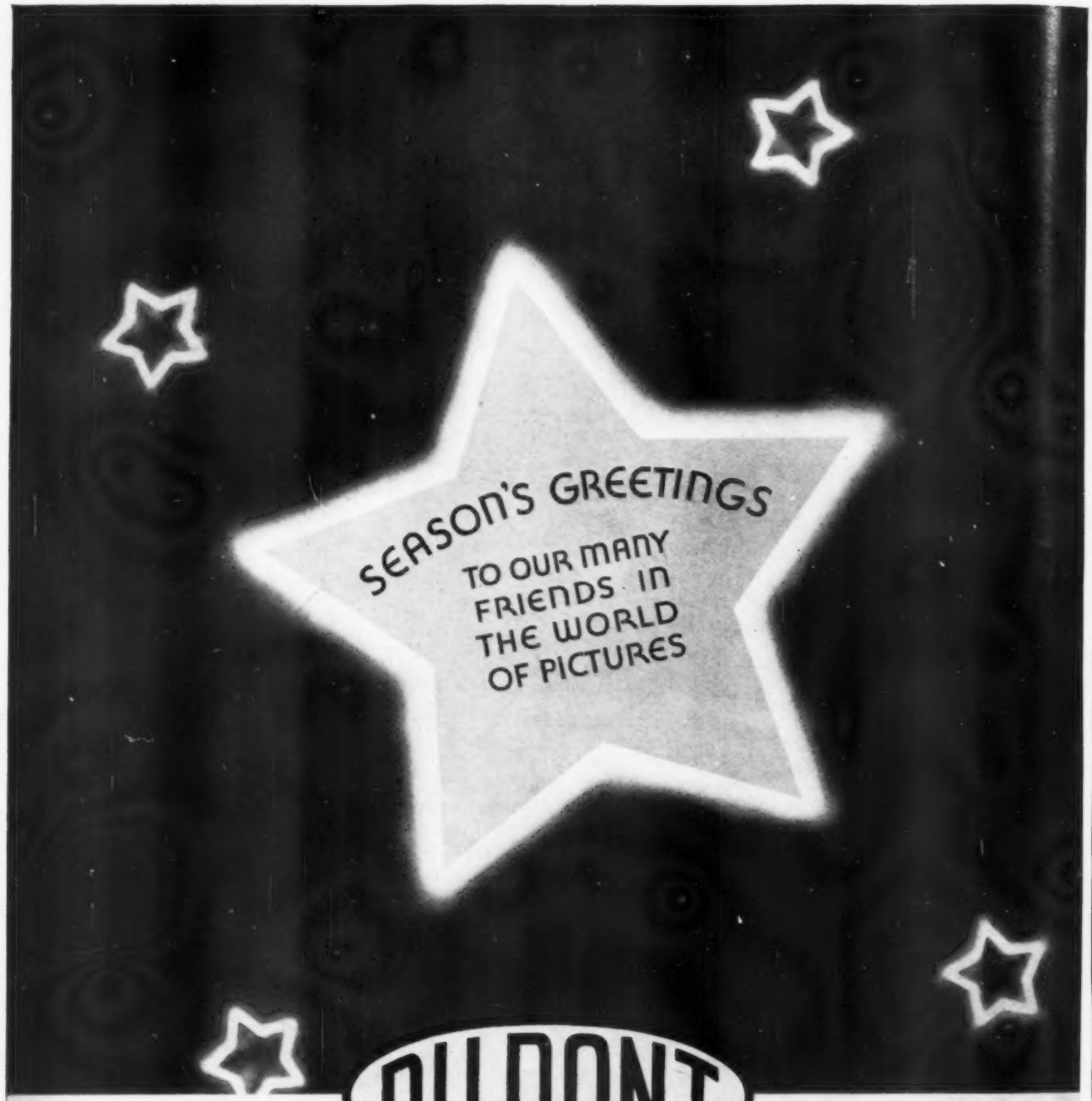

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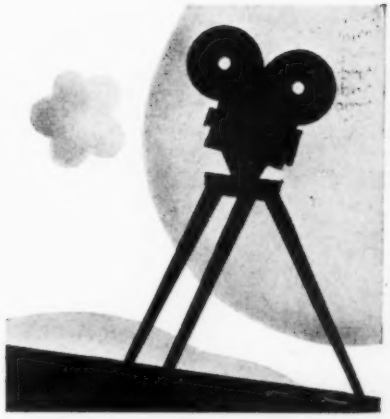

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- Something about the more technical side of photography and studio practice will be contributed by authoritative writers.

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Harry Perry, A. S. C.

Cinematic Rhythm in Film-Editing

by
Harry Perry A. S. C

MONTAGE, as Karl Freund, A.S.C., recently wrote, is simply the familiar technique of film craftsmanship refined to the utmost. Its development is due to two paramount factors: first, the economic limitations under which the earlier Russian film-makers worked; and secondly, the fact that the Russians, with true Slavic introspectiveness, analyzed every phase of film technique with the aim of reducing it to its simplest and most expressive form.

Essentially, Montage means "cutting" or "editing." Here in America, we are thoroughly aware of the importance of this phase of production, even though few of us have had the time to subject it to such detailed analysis. All of us have seen films made and unmade by good or bad cutting, and some of us have at least speculated on the basic principles involved in the process. We know, for example, that a succession of long scenes joined together will give us a slow-paced sequence, while a succession of shorter shots—even of the same action—will result in a noticeably faster tempo. We know that sequences, and entire productions, for that matter, can be joined together in a fashion which produces a definite, filmic rhythm and makes the picture more enjoyable.

This filmic rhythm should not be confused with the often exaggeratedly rhythmic action and direction used in fantasy, musical and dance sequences; it is, instead, the natural flow from scene to scene, from idea to idea, produced by intelligent editing. It is essentially the relationship between the **content** of the individual scenes joined together to form a sequence.

Reducing the matter to terms of common practice, filmic rhythm is most clearly noticeable in cross-cutting, that is, the alternate insertion of different (though dramatically related) scenes one after another. Let us, for example, consider how this rhythm may be brought out in assembling a short sequence based on the following simple scenes:

1. A running shot of a racing car, made from a camera-car running ahead of it.
2. A running shot of an ordinary family sedan, made the same way.
3. A running shot of a man, riding a bicycle.
4. A similar shot of a man, walking.
5. A similar dolly-shot of a baby crawling toward the lens.
6. An insert of a snail moving toward the camera.

As a preliminary experiment, try cutting 15 feet of the snail, 15 feet of the racing-car, 15 feet of the snail, 15 feet of the racer, and so on. Although the footage of these scenes is identical, on the screen the racing-car shots will appear much the shorter. Because the content is much more dynamic, these shots will appear about half the length of the more static snail-shots.

Now take your original six scenes and assemble them as follows:

15 feet snail.
15 feet baby.
15 feet man walking.
15 feet bicyclist.
15 feet family sedan.
15 feet racing-car.

Each of these scenes is the same length, 15 feet; each is on the screen for the same amount of time, 10 seconds. But the filmic time-relation of the increasingly dynamic subjects will make the shots seem to get shorter and shorter, building up to a definite cinematic climax.

Now, suppose you want to build to an even more marked climax; arrange the scenes like this:

15 feet snail.
12 feet baby.
9 feet man walking.
6 feet bicyclist.
3 feet family sedan.
1½ feet racing-car.

The result will be a bewildering crescendo of speed. This is because you are applying filmic rhythm to the editorial treatment: deliberately shortening the screen-time of the shots in proportion as the content grows more dynamic. For the same reason, if you reverse the order of these scenes, you will get a quick but effective deceleration of tempo.

(Continued on Page 352)

Improvising Camera Tricks

by

William Stull, A. S. C.

THERE is no such word as "can't" in the vocabulary of the cinematographer. It is his business to do the impossible—and he does, regardless of circumstances. Whether it is evolving a piece of equipment suddenly needed on location, or improvising a difficult and unexpected trick shot, he always manages to deliver. Especially is this true of the men who photograph "quickies" and comedies, for in order to overcome the handicaps of short schedules and shorter budgets, they must improvise constantly.

One of Brown's less spectacular improvisations is the manner in which he mounts his filters. The reconstruction of his camera (which is, incidentally, said to be the only sound-camera in Hollywood which has never worked inside a "blimp") precluded the normal use of gelatin filters in the aperture; and Brown does not care for glass-mounted filters. Therefore, he secured a number of small brass tubes, about an inch and a half long, and exactly the right size to fit snugly in the front of his len-mounts. Into these he fits his gelatin filters, holding them in place with a small retaining-spring; the tube slips directly into the lens-mount, where it is held tightly by spring-sections cut in the brass sides—and, at very little cost, he has one of the simplest and most accessible filter-mounts in Hollywood!

To secure the proper flare from street lamps in night-effect shots, Dwight W. Warren, A.S.C., puts a thin coating of ordinary vaseline on an optical flat in his matte-box; carefully-made finger-marks in the vaseline give each lamp its appropriate halo.

Comedy action often requires the use of "wire gags," in which people or objects are moved about by invisible wires. Sometimes these wires are actually invisible—but at other times, despite every precaution, they may show in the picture. When this happens, Cinematographer Warren simply takes the negative and retouches the wire out of each frame with retouching pencil and varnish, exactly as a portraitist retouches wrinkles away from an aging dowager!

In much the same fashion, Cinematographer William C. Thompson, A.S.C., has produced lightning flashes without the difficulty of using any of the customary lightning-producers on the set. To begin with, he films the scene in a low key; then he paints his lightning on the developed negative, blocking out several frames at a time with transparent, orange water-color. The effect on the screen, of course, is a bright flash in which the set is much lighter —exactly the effect we see when a room is suddenly illuminated by a flash of lightning somewhere outside.

Thompson's improvisation recently helped out an independent producer who was short of actors. The script called for a jury in an important court-room scene: but the budget wouldn't permit hiring a full dozen extras. So Thompson improvised: one actor was called, and photographed twelve different times upon the same film, in twelve different costumes and characters—and thanks to this difficult multiple-exposure, the producer had twelve jurors for the price of one!

In these days of projected-background "trick" shots, dual roles are relatively easy; but before SuperSensitive film and fast lenses made this process possible, dual roles were exceedingly difficult, as they had to be made directly in the camera, by successive exposures through complementary masks, and timed by counts. In the many films that Jerome Ash, A.S.C., made with Frank Ford as director and star, the cinematographer was forced to do many shots that would be considered difficult even now. One of them, which he remembers particularly, was a triple-exposure, in which Ford played three roles: first indulging in a fight between two of his characters, and later, in his third part, picking up his vanquished self and carrying him out of the picture! When the shot was first outlined, the producer, Louis Berson, was positive that even Ash wasn't enough of a magician to film it—and wagered a suit of clothes on his belief. But Ash again did the impossible: not only did the triple exposure work out to perfection, but when Ford came in and picked himself up, his face was recognizable simultaneously on both characters! The secret—only now disclosed—was that in this scene, as in several others in which one character "crossed" the other, a double was used, wearing a thin gelatin "death-mask" of Ford's face, made up to the proper character.

In an early "Tarzan" picture, Ash's camera-magic provided a thrilling battle between the hero and two lions—despite the fact that the hero, who was rather timid, did not even see the lions, nor, for that matter, were there actually two of the beasts! According to the script, the film "Tarzan" was in a gully, between two cliffs, and standing on a rock by a pool. A lion appeared on each cliff: one leaped down on the man, bearing him to earth, and then the other joined the melee. Actually, there was but one lion, and one cliff! The foreground, including the "rock," was painted white, and the scene was filmed thrice. First the man went through his action, falling at the proper moment. Then one cliff was put in place, and the lion leaped down from it to the rock. The cliff and the lion were then put at the opposite side of the set, and the action repeated. Finally, the three negatives were matched together and printed onto a single strip of positive: so well had Cinematographer Ash calculated his shot that the lion appeared to land directly on the actor's shoulders and bear him to the ground, while the second lion leaped into the fray with equal accuracy!

Cinematographer Thompson tells of making trick fades and wipes—ordinarily delegated to the Optical Printer experts—directly in the camera by using a "comb" of black card-board or tin moved in front of the lens, and timed, of course, by counts. In fact, to this day he carries a razor-blade, several pieces of black title-card, and some black paint as part of his regular euipment, so that he can improvise such optical-printer effects at any time. Another thing which he carries against the need of improvisations is a magazine "reverse-loaded," with the emulsion-side away from the lens: this enables him to film difficult scenes in reverse, with the camera upside-down or run backward, as the case may be. Many of the chariot-race shots for "Roman Scandals" were made with

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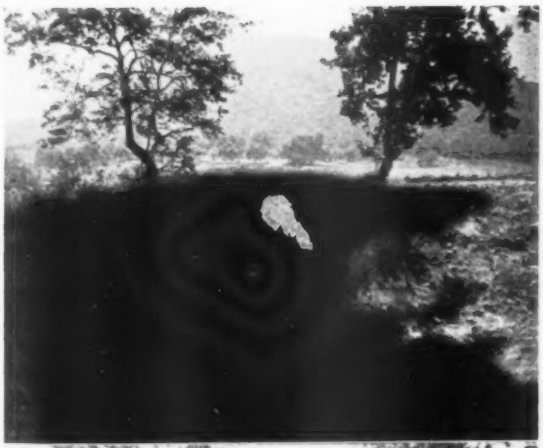

Making Matte-Shots

by
Arthur J. Campbell, A. S. C.

IT WOULD be a gross overstatement to say that modern motion pictures could not be made without "matte-shots" — but it is a fact that without this type of special-effects cinematography, production would be seriously hampered. Pictures would cost more, would have more physical limitations, and be much less convincing to the eye.

For the following information, the writer is greatly indebted to M. L. Larrinaga, of the special-effects staff of the RKO Studios, and one of Hollywood's foremost matte artists.

Probably the most common form of matte-shot is the addition of ceilings on interior sets, or the transformation of backgrounds in exterior scenes. However, these shots are sometimes used to add or remove minor details in almost any part of the scenes, to change or to complete the foreground of a set, to add distance or perspective to miniature-shots, or even to serve as a complete background for use as a plate for projection-composite shots.

Generally speaking, the matte-shot of today is an outgrowth of the "glass-shot" of a few years ago. Such shots, it will be remembered, were made by placing a large glass, upon which had been painted the desired scene, in front of the camera. Through the clear, unpainted portions of the glass, the camera took in the normal action on the set or location, while the painted image upon the glass was carefully blended into the actual portions of the scene.

This method, while effective, had definite limitations: it frequently slowed up the work of the company on the set, and required great care in the positioning of the camera and glass, and was naturally a considerable restriction upon the director and the cinematographer.

The making of a matte-shot, on the other hand, does not interfere with production to any such degree, and allows director and cinematographer much greater freedom in their choice of set-ups. As a general rule, the Head of the Special-Effects Department has studied the script of the production thoroughly, and made careful note of the scenes likely to require or benefit by the use of matte-shots. Then preliminary sketches are made in collaboration with the production's art-director, so that the settings and the matte-shots may be properly coordinated.

When the film is in production, the scene itself is made on the appropriate set or location: in most respects, the director and cinematographer work in the normal manner in making such scenes. The camera carries a glass matte in its matte-box, and upon this glass the desired area is carefully blocked out with a quick-drying opaque paint, and the scene is made in the normal manner. The only restriction is of course that the actors must move only within the un-matted or visible space.

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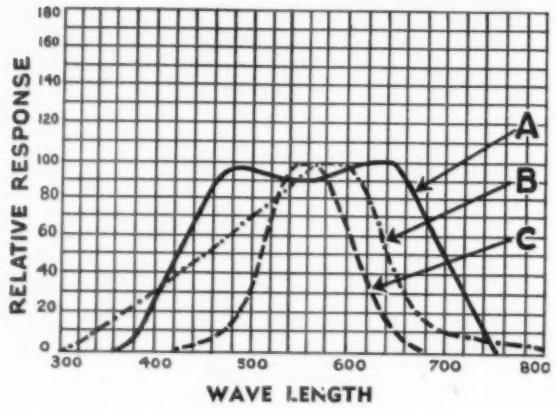

A—Average supersensitive film. B—Photocell Response. C—Visibility curve.

Using the Photoelectric Exposure-Meter

by
William H. Daniels, A.S.C.
and A. L. Lane, A.S.C.

THE SAME rule applies to exposure-meters as to any other of the cinematographer's tools: it is valuable to him only to the extent of his ability to use that tool intelligently. Its uses must be understood, and its possible abuses known, as thoroughly as those of lenses, emulsions, or anything else with which he may work. Especially should the limitations of such an adjunct be thoroughly realized, that the fullest practical advantage may be taken of its proper use.

This discussion of the professional use of the photoelectric exposure-meter is by no means intended as an exhaustive scientific treatise on the subject, but purely as an informal record of some of the experiences of the authors in using the device on actual production, and preliminary tests of the meter's application to certain photographic problems in connection with a production now preparing. While the data herein contained is accurate, it is not as complete as we could wish; and the authors hope in the future to present a more comprehensive discussion of the matter.

The type of photo-cell exposure-meter most commonly used in professional cinematography is the "Weston" Photronic-cell meter, which consists of a small case housing a direct-action, dry-disk type photocell in which the light energy is transformed directly into electrical energy, connected directly to an electrical measuring instrument calibrated to read in foot-candles (brightness). On the reverse of the case, immediately below the dial, is a simple calculator for translating the measured brightness into terms of the proper diaphragm openings and shutter-speeds for the proper exposure, and adjustable to compensate for any emulsion-speed.

Through a close study of the possible errors and their avoidance while taking exposure readings, and using the findings in conjunction with the preconceived photographic treatment of the sequence in work, we have proven to our satisfaction the unique artistic and technical value of the exposure-meter to the cinematographer.

An important factor, which must always be considered, is the area covered in taking the meter's reading. The device has been designed to cover approximately the area included by normal cine lenses: but care must be taken to insure that, for example, the meter is not inadvertently tilted slightly upward, thus including more of the sky-area than will be actually photographed, or tilted downward to include more of the darker foreground than the camera will see; in the first instance, this error would make the meter give a reading considerably less than the correct exposure for the actual scene, resulting in more or less underexposure; the latter error would naturally be equally on the side of overexposure. In practice, we have found it advisable to hold the meter slightly in front of the camera, and on the optical axis of the camera's lens, meanwhile shading the meter with one hand. In this connection, it may be mentioned that a small, demountable sunshade would in many instances be of much practical benefit.

Inevitably, the meter can give only an overall or average reading indicating the approximately correct exposure for the scene as a whole: it cannot ordinarily indicate that there exists any excess or lack of illumination in any part of the field. Such errors of reading exposure may be eliminated by a careful check with the meter of the greatest extremes of exposure within the camera's field of view for that particular shot. Then, by narrowing down the scope and direction of the meter to the most important area in the shot, a true exposure reading for this key area will be obtained. In this connection, the supplementary guides provided on the calculator-dial of the meter can be helpful. On this dial appear, to the extreme right and left of the indicator, pointers indicating the extremes of over and under exposure possible within the average limits of film latitude, as derived from typical H. & H. curves. If the supplementary readings of the greatest extremes of exposure just referred to fall within these indicated limits, the extremes of exposure upon the film should likewise be within permissible limits. For professional use, of course, these secondary areas of extremes of light and shade are then balanced to the key area, filling in the deeper shadows with booster lights or reflectors, and toning down the objectionable hot spots with diffusers, shadows, paint, etc., as the occasion dictates. (In normal practice, it is often quite safe, and decidedly quicker, to arrange this lighting balance first, and thereafter take the meter-reading.) Through such a procedure an artistically and technically correct exposure is assured consistently for the sequence, and the entire picture, with a high average of quality in the release-prints resulting from the normal, even-density negative.

It is possible to use the meter in the same way in filming interior scenes, but in most instances it seems hardly advisable, since professional interior cinematography works from a fairly fixed standard of illumination, and the most vital factor is the balance of the lighting, which is a purely individual proposition, and none too well suited to mechanical determination.

As regards the use of a photocell meter with filter work, it is possible within certain limits to secure a direct reading by placing the desired filter directly over the meter's

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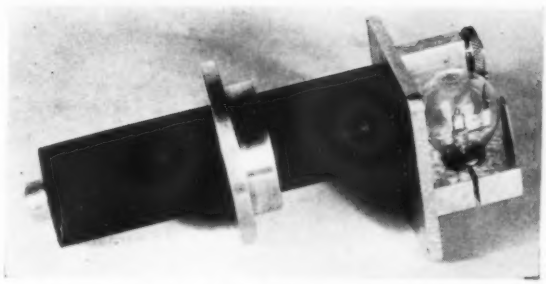
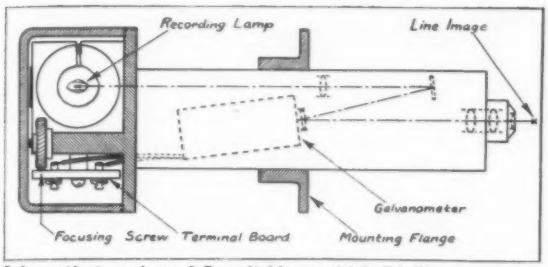


Side view of unit with lamphouse cover removed.



Schematic top view of Berndt-Maurer high-fidelity variable area (galvanometer) recording unit.

Recording Unit Replaces Glow Lamp

by
Karl Hale

WHILE the use of a galvanometer is not new in recording sound, still the replacement of a glow-tube with a galvanometer without rebuilding the housing or in any way altering the receptacle that takes the glow-tube, but replacing it with a galvanometer is interesting to the sound industry.

Seemingly galvanometers built up to this time have been of such size that it was found necessary to enlarge the housing to take this accessory, especially if the glow-tube system was used.

Eric M. Berndt, who has specialized in 16mm equipment built to order and who recently launched into sound on 16mm accessories, recently announced a galvanometer for recording sound on 16mm. This galvanometer found a market, according to Berndt, with the 35mm users. Because of this request he and J. A. Maurer set to work to perfect a galvanometer that would replace the glow-tube for variable area recording without in any way disturbing or rebuilding any of the present equipment now used for this type of recording.

Maurer is recognized for his special interest in the variable area type of sound track and for his statements relative to the exposure and processing of this type of recording. It is also claimed he is responsible for the introduction of accurate methods for focusing the slit image and adjusting it so as to eliminate distortion due to azimuth.

We quote Berndt's statement relative to this new galvanometer:

"The matter of frequency characteristic has been given careful consideration. For use with positive film in studio double-system work the resonance peak of the galvanometer is located on 10,000 cycles. The height of the peak is well suited for furnishing the correction needed to offset the slit and film losses at this frequency. For use in single-system cameras with negative stock the peak is located at 8,000 cycles, which is believed to be the most favorable point for this class of work. In either case the response curve below the peak is flat, there being no minor irregularities and no low frequency cut off.

"The unit is regularly supplied with a galvanometer of 15 ohms impedance, but can be equipped to work on any standard line impedance up to 500 ohms. The change of impedance is not accomplished by the insertion of a transformer, but by change of the windings of the galvanometer itself. For this reason the frequency characteristic is the same for all impedances. The power required is approximately 0.25 watt for full scale deflection.

"The optical system is a high light-transmitting efficiency. The elements are supplied by Bausch & Lomb. They are mounted in permanent adjustment in a sealed tube which excludes dust, so that the only lens surface which it is necessary to clean at any time is the front surface of the objective which focuses the image on the film. The clearance between this lens and the film is approximately 5/16 inch, which makes it readily accessible. The line of light on the film is ½ thousandth by 70 thousandths of an inch. A micrometer screw actuated by a knurled head conveniently located at the back of the lamp house provides for bringing the line image to an exact focus on the film. This is a matter of the greatest importance where frequencies of the order of 10,000 cycles are to be recorded. The adjustment of focus can be locked rigidly without shift when it has been accomplished satisfactorily

"The lamp used to furnish the recording light is designed for use with a 6-volt storage battery. Because of the high efficiency of the optical system it is burned far below the rated current, which gives it an exceptionally long life. Replacement is a very simple matter, the lamp house being provided with a sight by which the filament may be readily located in the correct position when inserting the lamp in its socket. Once the lamp is locked in position it cannot be jarred out of place. One spare recording lamp is furnished with the unit, but in case of emergency a standard automobile headlight type of bulb can be used."

It is claimed by the makers of this unit that this accessory will prove of exceptional interest because the area type of track is now said to be open to general use, since the basic Fritts patent on this type of recording expired in 1933.

A Special-Effects battle. There are actually but two boats in this shot, which was produced by split-screen and reflection.

Special-Effects and Montage for "Cleopatra"

by

Gordon Jennings

Head of Special-Effects Dept., Paramount Productions

CECIL B. de Mille's latest production, "Cleopatra," furnishes a vivid example of the unusual scope and versatility demanded of the modern special-effects worker. In the production of this picture, the Paramount Special-Effects staff, in addition to providing all of the necessary fades, dissolves, wipes and other transitions, and executing a number of important miniature-shots, designed, constructed and supervised a great number of "set-miniatures" and "hanging miniatures" completing several of the impressive settings, collaborated with the studio's Transparency staff in making many of the projected-background scenes, and conceived, photographed and assembled the entire Montage-sequence depicting the Battle of Actium, which is one of the dramatic high-lights of the film. When it is remembered that this diversified work was accomplished simultaneously with the production of similar special-effects scenes for several other films in production at the same time, it can clearly be seen that this could not be a one-man achievement, but was necessarily the result of perfect team-work on the part of a large and efficient staff.

The transitions, naturally, were assigned to Paul Lerpee, who is in charge of all Optical Printing. They were purely routine, and constituted only a small part of his contribution to the production.

The most important of the miniature-shots were two which showed "Cleopatra's" barge entering and leaving port. Actually, this might be considered as a miniature only in relativity: the studio's largest tank—an area the size of a large stage—was required for the scene, while the barge itself was actually larger than an ordinary rowboat! This barge was painstakingly constructed from historical records of the ancient queen's actual barge: built to the scale of 100 feet to the foot, it was over twelve feet long, and weighed several tons. The actual barge was propelled by 300 oars arranged in five banks, 150 to the side; this was not practical for our purposes, so the miniature was propelled by ropes attached below the water-line, and pulled by stagehands outside of the picture area. None the less, the oars must function, and this was achieved by an intricate mechanical linkage powered by an electric motor: the oars rose, fell, made their stroke and "feathered" in a perfectly realistic fashion, and could be operated at varying speeds, in order to accommodate varying camera-speeds in filming the shot. For the night-effect scenes, the interior of the barge was illuminated by electric lamps, and the bow-wave, the wake of the ship and the spray from the oars was created by carefully-directed jets of compressed air fed from tubes under the water. Two of these tubes, fitted with many fine upward-pointing nozzles, extended along the sides of the barge, just below the lowest position of the oars, while others were placed at bow and stern. The necessary compressed air for this, together with electricity to supply the motor and the lights, were supplied by submerged cables and hose trailed from the stern. During the making of the shot, two men rode within the barge, to manipulate the motor, light and air controls; yet in spite of this it was necessary to ballast the ship with over a ton of lead in order to sink it to the proper level!

At the far end of the tank, a painted backing was built, to represent the farther side of the harbor; this was painted in monochrome, and high-lighted to give a forced perspective and modelling. In the immediate foreground of the shot, a small "front-miniature" set was built, representing docks. This, too, was in monochrome, and with painted high-lights and modelling. The barge was towed diagonally across the picture, about twenty feet from the camera. The scene was lit by artificial light entirely, lighting the background relatively flat, while the barge was lit with much greater contrast. The scene was filmed at almost eight times normal speed, with the result that the movement of the barge was slowed down to exactly the correct speed for so massive a ship, and a perfect illusion of actuality was conveyed.

The Montage sequence of the battle was virtually a production on a reduced scale. A representation of the battle was of vital dramatic necessity to the story, yet in spite of the fact that the production was a "special," it

(Continued on Page 354)

PHOTOGRAPHY of the MONTH

"BROADWAY BILL" (Columbia)

Joseph Walker, A.S.C.: Directing Cinematographer

Hollywood Reporter (October 25, 1934): "Photography of Joseph Walker is excellent, particularly in the action sequences."

Daily Variety (October 25, 1934): "Photography is up to the picture's general excellence."

Film Daily (November 9, 1934): Photography "A-1."

"EVELYN PRENTICE" (M-G-M)

Charles G. Clarke, A.S.C.: Directing Cinematographer

Daily Variety (October 27, 1934): "Photography and production were both in keeping with the general excellence of the picture."

Hollywood Reporter (October 27, 1934): "Clarke's photography is mostly to the good."

Motion Picture Daily (October 29, 1934): "The photography is okay."

Film Daily (November 10, 1934): Photography "Good."

"LIMEHOUSE BLUES" (Paramount)

Harry Fischbeck, A.S.C.: Directing Cinematographer

Hollywood Reporter (October 30, 1934): "Fischbeck Camera Work Highlight." "—and exquisitely photographed—." "—but it is the photography of Harry Fischbeck that is the real star of the picture."

Daily Variety (October 30, 1934): "Photography is okay."

Motion Picture Daily (October 31, 1934): "Harry Fischbeck's photography is fine."

"COLLEGE RHYTHM" (Paramount)

Leo Tover, A.S.C., Ted Tetzlaff, A.S.C.: Directing Cinematographers

Hollywood Reporter (October 31, 1934): "Tover and Tetzlaff give the picture all the best of good photography—."

Daily Variety (October 31, 1934): "Photography very good."

Film Daily (November 1, 1934): Photography "Fine."

"FLIRTATION WALK" (Warner Bros.)

Sol Polito, A.S.C., George Barnes, A.S.C.: Directing Cinematographers

Hollywood Reporter (November 1, 1934): "—and the photography, by Sol Polito and George Barnes, is way above average—."

Daily Variety (November 1, 1934): "Photography excellent."

Film Daily (November 2, 1934): Photography "A-1."

Motion Picture Daily (November 3, 1934): "The photography by Sol Polito and George Barnes is topnotch."

"CHEATING CHEATERS" (Universal)

Norbert Brodine, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 2, 1934): "However, Norbert Brodine gives the production lovely photography—if that could only tell a story well, Universal wouldn't have a 'cheater' on its hands."

"THE PAINTED VEIL" (M-G-M)

William Daniels, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 3, 1934): "Photography again can claim a major share of applause. William Daniels has done a beautiful job—."

Motion Picture Daily (November 5, 1934): "It is all photographed with such artistry by William Daniels—." "—exquisite photography—." "—and excellent camera work."

"REPEAL" (M-G-M)

Ray June, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 3, 1934): "Photography is consistently good—."

Daily Variety (November 3, 1934): "Photography is excellent—."

"IMITATION OF LIFE" (Universal)

Merritt Gerstad, A.S.C.: Directing Cinematographer

Daily Variety (November 3, 1934): "Photography by Merritt Gerstad is all four aces."

"FUGITIVE LADY" (Columbia)

Al Seigler, A.S.C.: Directing Cinematographer

Daily Variety (November 3, 1934): "Photography satisfactory."

"HELL IN THE HEAVENS" (Fox)

Bert Glennon, A.S.C.: Directing Cinematographer

Motion Picture Daily (October 27, 1934): "The photography by Bert Glennon is extraordinary."

"ROMANCE IN MANHATTAN" (RKO)

Nick Musuraca, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 5, 1934): "Photography, by Nick Musuraca, way above the usual."

"I AM A THIEF" (Warner Bros.)

Sid Hickox, A.S.C.: Directing Cinematographer

Daily Variety (November 6, 1934): "—and good camera work by Sid Hickox."

Hollywood Reporter (November 6, 1934): "Again, as a particularly laudable feature of a picture, we recommend the expert photography by Sid Hickox. Photographers these days, by virtue of their really excellent work, are fast proving who the consistent experts are that contribute so much to the success of pictures."

"BABBITT" (Warner Bros.)

Arthur Todd, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 7, 1934): "—and Arthur Todd's photography is interesting."

Daily Variety (November 7, 1934): "Piece is beautifully photographed—."

(Continued on Page 352)

PHOTOGRAPHY OF THE MONTH

(Continued from Page 351)

"THE SILVER STREAK" (Radio)

J. R. Hunt, A.S.C.: Directing Cinematographer

Vernon Walker, A.S.C.: Photographic Effects

Hollywood Reporter (November 8 1934): "Roy Hunt's camera work deserves praise."

Daily Variety (November 8, 1934): "Camera work by J. Roy Hunt and Vernon Walker is strikingly outstanding and spectacular."

Motion Picture Daily (November 12, 1934): "Photography by J. Roy Hunt and photographic effects by Vernon Walker rate high."

"IT'S A GIFT" (Paramount)

Henry Sharp, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 8, 1934): "—and Henry Sharp photographed in first-class fashion."

Daily Variety (November 8, 1934): "Photography okay."

"MARIE GALANTE" (Fox)

John Seitz, A.S.C.: Directing Cinematographer

Daily Variety (November 9, 1934): "John Seitz's photography okay."

Motion Picture Daily (November 10, 1934): "The photography of John Seitz is A-1."

"HOME ON THE RANGE" (Paramount)

William Mellor, A.S.C.: Directing Cinematographer

Daily Variety (November 9, 1934): "William Mellor has photographed very well."

Hollywood Reporter (November 9, 1934): "Probably the single redeeming feature of the piece is some poetical photography—."

Motion Picture Daily (November 10, 1934): "William Mellor did a good job on the photography."

"BABES IN TOYLAND" (Hal Roach)

Francis Corby, A.S.C., Art Lloyd, A.S.C.: Directing Cinematographers

Hollywood Reporter (November 10, 1934): "Corby and Lloyd in their photography do both swell and poor work."

Daily Variety (November 10, 1934): "Photography is very good."

Motion Picture Daily (November 12, 1934): "The photography of Francis Corby and Art Lloyd is fair."

Film Daily (November 12, 1934): Photography "A-1."

"THE PRESIDENT VANISHES" (Wanger-Paramount)

Barney McGill, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 12, 1934): "Deserving, too, is the excellent camera work of Barney McGill, with the most intelligent use of stock shots this reviewer has ever seen."

Daily Variety (November 12, 1934): "Camera work is top-notch."

"SEQUOIA" (M-G-M)

Chet Lyons, A.S.C.: Directing Cinematographer

Motion Picture Daily (November 10, 1934): "Chester Lyons' photography is also a feature the patrons will talk about."

"MAYBE IT'S LOVE" (Warners)

Arthur Edeson, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 15, 1934): "Edeson's photography is just fair."

Daily Variety (November 15, 1934): "Photography is first class . . ."

"FLIRTING WITH DANGER" (Monogram)

Archie Stout, A.S.C.: Directing Cinematographer

Daily Variety (November 15, 1934): "Archie Stout gets in some nice shots."

"ONE HOUR LATE" (Paramount)

Benjamin Reynolds, A.S.C.: Directing Cinematographer

Hollywood Reporter (November 20, 1934): "—and the photography is all to the good."

Daily Variety (November 20, 1934): "Camera has been well handled by Benjamin Reynolds."

CINEMATIC RHYTHM IN FILM-EDITING

(Continued from Page 345)

Increasing the diversity of angles on each of these actions will further increase the tempo of your sequence; but this will require greater care in the assembly, because each angle—each type of camera treatment — will naturally have its inherent, individual rhythm, which must be carefully coordinated with those of the other scenes, and of the sequence itself. Going back to our hypothetical subjects — the snail, the baby, the pedestrian, the bicyclist, the family car and the racer—let's see how diversified angles combined with rhythmic cutting can build a sequence. We would still begin with 15 feet of the insert of the snail; following this with 15 feet of the baby crawling. Next, 12 feet of the man walking toward a stationary camera, followed by 12 feet of the bicyclist pedalling diagonally toward a fixed camera. Now add 10 feet of the family sedan jolting along a rough road, coming toward a stationary camera from the same angle, followed by 8 feet of an extreme long-shot of the racer dashing across a broad expanse of open country, still approaching diagonally. Follow this with a big-figure "follow-shot" of the man—7 feet—and a similar shot of the cyclist; then 5 feet of a follow-shot of the family car crossing the screen, followed by 4 feet of an Akeley-shot of the racer. Next, about 2 feet of the original "dolly-shot" of the walking man; 1 foot of the running-shot of the cyclist; a dozen frames of the running-shot of the family car, and finish with eight frames of the racer. The idea could even be extended by climaxing with quick "flashes," a few frames long, showing the man's feet (or face, if he is dramatically important), the cyclist's pedalling feet, the spinning wheels of the racer, and so on, progressively shortening the flashes until the final shot might comprise but three or four frames of film. For the best effect, this cycle of "flashes" should probably be repeated several times, and the angles carefully diversified.

In this last treatment, the rhythm builds more slowly, as more footage is used: but it builds even more steadily, and to a greater climax. This is due to two principal reasons: first of all, the angles used are in themselves progressively more and more dynamic, and convey an increasing sense of speed; and secondly, the rhythmic editorial treatment prgoressively reduces the screen time of each scene as the action and camera-treatment grow more dynamic and arresting.

Rhythmic cutting is applicable to any type of production, and to all types of scenes. It can be used to maintain an even tempo in a sequence whose component scenes may be of differing individual rhythms; or to retard or accelerate the tempo of a sequence. But one thing need be kept in mind: namely, that there should be a definite relationship between the footage allotted to any scene, the "time relation" of the action portrayed in the scene, and the rhythm desired in the completed sequence. Just as we are accustomed to use long scenes and few cuts to maintain a placid rhythm, and short scenes with a number of cuts to build to or maintain a quick tempo, so, too, we should remember that by proportioning the footage to the visual forcefulness of the action and camera-angles, we can build sequences and productions with dramatically useful cinematic rhythm.

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SPECIAL-EFFECTS AND MONTAGE FOR "CLEOPATRA"

(Continued from Page 350)

was immediately seen that the sequence absolutely could not be made by normal methods. To adequately film this battle, which included both land and sea fighting, by the methods in vogue up to a few years ago, could not have cost less than $1,000,000, a figure obviously out of the question. Accordingly, as is so often the case, the final script of "Cleopatra" came through with this important sequence covered by the simple notation, "Montage, for Special-Effects Dept."

Our first step was to prepare a rough continuity of our treatment of the sequence. This was partly written, and partly drawn: it consisted essentially of a description of the results we planned, accompanied by a number of sketches, prepared by the Department's art-director, illustrating the principal scenes. We then conferred with Mr. de Mille upon this, and secured his approval, and that of the production authorities upon it, and upon our tentative budget for the job.

The next step, of course, was to prepare and photograph the various component shots required. The miniatures of the sea-fight, like those of the royal barge, were built by Art Smith, and photographed by J. D. Jennings, A.S.C. It is interesting to note that although on the screen a fleet of 35 or more galleys appears to be engaged, in reality but two miniature galleys were used. One of these was the royal barge, rebuilt as a war-galley; the other one was a completely new ship, though lacking many of the refinements of the other. They were multiplied into a fleet by the old, familiar trick of parallel mirrors, and these were again multiplied into the two opposing fleets by split-screen double-exposures. The closer shots of the battle were made using these two miniatures, with often a number of less finished miniatures and cut-outs in the background, and in some instances several of these shots were combined by Optical Printing. As the warfare of the period made extensive use of fire-balls thrown by catapults, the ships were entirely fireproofed by application of special chemicals and the use of asbestos fabrics. In consequence, we were able to burn the ships daily for several weeks! The catapults, etc., were likewise in miniature; and several of these shots were used as backgrounds for composite shots —both Optically Printed and Transparency—in which living actors were placed in the foreground with the miniature battle raging in the rear.

The land battle was filmed by more or less conventional methods, using small groups of actors. Some of these scenes were intercut with, or superimposed upon stock-shots of chariots and horsemen made fourteen years ago for Mr. de Mille's "Ten Commandments"! The spectacular shot of the wounded soldier apparently being impaled by the spiked wheel of the car of Juggernaut, was of course made (like a magician's trick) "with mirrors." The scenes of "Antony" fighting around the tree were made separately by Mr. de Mille, and incorporated into our sequence.

The important task of assembling these many scenes into a coherent whole was in charge of Paul Lerpee, to whom great credit is manifestly due. He began the sequence, you may recall, by shots of Egyptian and Roman trumpeters, on high walls, summoning the troops. The former, incidentally, was taken from an earlier production, "The Wanderer," which, oddly enough, was the work of Victor Milner, A.S.C., who photographed "Cleopatra"; the latter shot was from "The Sign of the Cross."

There then followed scenes of the two armies marching forth to battle: and instead of separating these shots by the usual type of transition, Lerpee very wisely selected scenes in which the camera had been panned, and blended the pans in an Optical Printer. This naturally kept the tempo much faster than could be done with ordinary transitional methods. Several of the scenes immediately preceding the actual battle—including those showing the principals leading their armies in chariots, and the chariot-charge against the Roman legions—utilized the fourteen-year-old "stock-shots" wtih the current action superimposed, sometimes by Transparency process-shots, and sometimes by simple Optical Printing. It is interesting to note that the film had been so well preserved, and so carefully restored, that there was not the slightest trouble in registration with these shots.

Some few of the shots showing the marching armies were Optically Printed at distorted angles, to heighten the effect. The sequence made by Mr. de Mille, showing Antony's fight by the tree, was greatly shortened by Lerpee, and incorporated bodily in the sequence.

The transition to the sea-fight was effected by an Optical transition superimposing the wake of a ship upon the scene of the shore melee, and quickly blending with the introductory shots of the sea-battle. But aside from these few simple Optical Transitions, no superimpositions, or conventional transitions were employed except at the very end of the sequence, when a close-up of "Cleopatra" was superimposed upon the final shots of the rout of the Egyptians. At several points, the fire-balls thrown by the catapults, photographed coming directly into the camera, provided excellent natural means of effecting quick transitions, as did shots of the fires, battering-rams, etc., of the night-effect scenes of the land-fight.

In all, many thousand feet of film were exposed upon this sequence, entirely by the special-effects staff. In the completed sequence, Lerpee used approximately three hundred separate scenes or cuts, and with them he told the entire story of the battle in 350 feet of film! Short, direct cuts, in great variety, kept the tempo throughout very fast: the majority of the cuts used were under two feet in length, and some were as short as eight frames. The problem of editing this sequence was heightened by the fact that the film was wanted for early release, so that instead of having the time to work from a normal black-and-white working print we had to cut the duping lavendar. None the less, six weeks after we had secured Mr. de Mille's approval on our tentative continuity, we were able to deliver the finished sequence, ready to be placed in the completed film. And the cost of our entire battle was less than the cost of building a single galley for filming the sequence full-scale, as would have been inevitable only a few years ago!

Improvising Camera Tricks

(Continued from Page 346)

the camera suspended over the road, upside-down; comedy scenes showing, for example, a dog retiring to a corner to stand on its head, are made the same way. Yet another unusual item in Thompson's location equipment is a magazine loaded with fast "sound-track" positive film, which he presses into service when filming desert and other scenes when the light is abnormally flat.

On the other extreme, Cinematographer Ash has frequently had to film exteriors where he could not use color-filters in the normal way, yet some improvisation was needed to secure the proper correction in the sky. For this, he has used large pieces of colored gelatin, which he mounts before the camera exactly as a glass for a "glass-shot" is mounted: the lower edge of the gelatin is carefully cut away to conform to the horizon-line on the ground-glass—and it serves as a very acceptable filter. Cinematographer William Mellor, A.S.C., filming "Wings in the Dark," undoubtedly used the largest filters so far known. Many of the scenes for this film were made at an airport, with the action taking place in practical interior sets, with the flying field showing through the windows. Mellor had filmed the normal exteriors through a "G" filter; and it was necessary that the landscape as seen through the windows should

carry through the same correction—but equally undesirable that the interior scene itself should be filtered. Accordingly, Mellor used the windows themselves as filters! He had colored glass window-panes used instead of clear glass; and as the colored glass used was very closely matched to the "G" filter, the result of this improvisation was perfect.

MAKING MATTE-SHOTS

(Continued from Page 347)

The film is held, undeveloped, and turned over to the special-effects department to be completed. In addition, a quantity of extra footage is photographed for use in the tests necessary for matching the matte-shot painting and the actual shot.

At this time, if it has not been done earlier, the matte-shot artist makes a rough sketch of the parts to be added by the matte-shot, and its relation to the already photographed scene. This sketch is submitted for the approval of the supervising art-director and the director of the production. Thereafter, the preparation of the actual matte-shot painting commences.

The first step is to develop a few frames of the extra test footage taken, and then to make a photographic enlargement of one of these frames, usually to approximately 4½x6 inches in size. This enlargement is to serve the matte-painter as a guide in matching the light-values, gradation, etc., of the scene in his painted matte.

The second step is to prepare the actual matte-painting. A frame of the negative test is put in an enlarging-camera or projector and projected on to the matte-painting support, which is usually about 30x40 inches in size. Then with the aid of the projector, the artist draws in the parts to be added, following the enlargement and his preliminary sketches. This system naturally assures a true photographic perspective.

The actual painting is made in monotone, and completed in considerable detail.

Then the first photographic test is made. This test is made by photographing the painted matte upon some of the undeveloped test-footage. Thereafter, any detail corrections that may be needed in the painting are made, and final tests for alignment, etc., are made, to be doubly certain that the matte will prove a perfect match for the already completed portions of the scene.

Thereafter, the exposed film of the scene itself is threaded into the camera, and re-exposed upon the matte painting. The painting fits precisely into the portions matted out of the original exposure, while the complementary areas,

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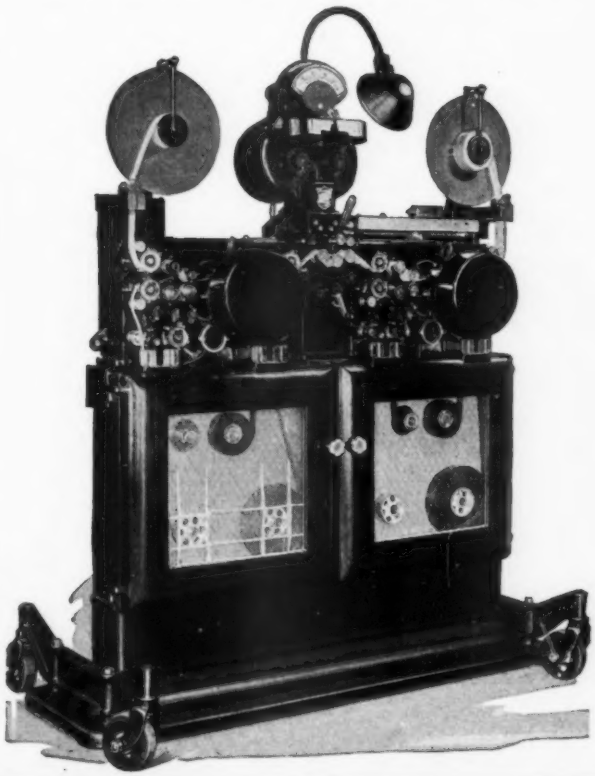

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having been painted a flat, non-reflective black, do not "register" upon the film. As a result, the completed matte-shot shows the painted matte as an indistinguishable part of the actual scene.

Figures 1 and 2 are excellent examples of successful matte-shots. They are from a picture in which the earlier action occurs in a typical small town of a number of years ago, while the later action shows the same town entirely modernized. Older production methods would have required not only the building of a large and costly set for the earlier action, but the complete rebuilding of the entire set for the modern sequences. The use of the matte-shot technique eliminated this expensive procedure, and the result is if possible even more satisfactory.

Figures 3 and 4 show the radical transformation made by this process in a long-shot needed for a certain sequence. Again, the upper picture shows the scene as actually photographed, with the foreground—in which, needless to say, there was actually **no** canyon—blocked out by the matte in the camera. The lower picture shows how convincingly the painted gully blends into the actual landscape.

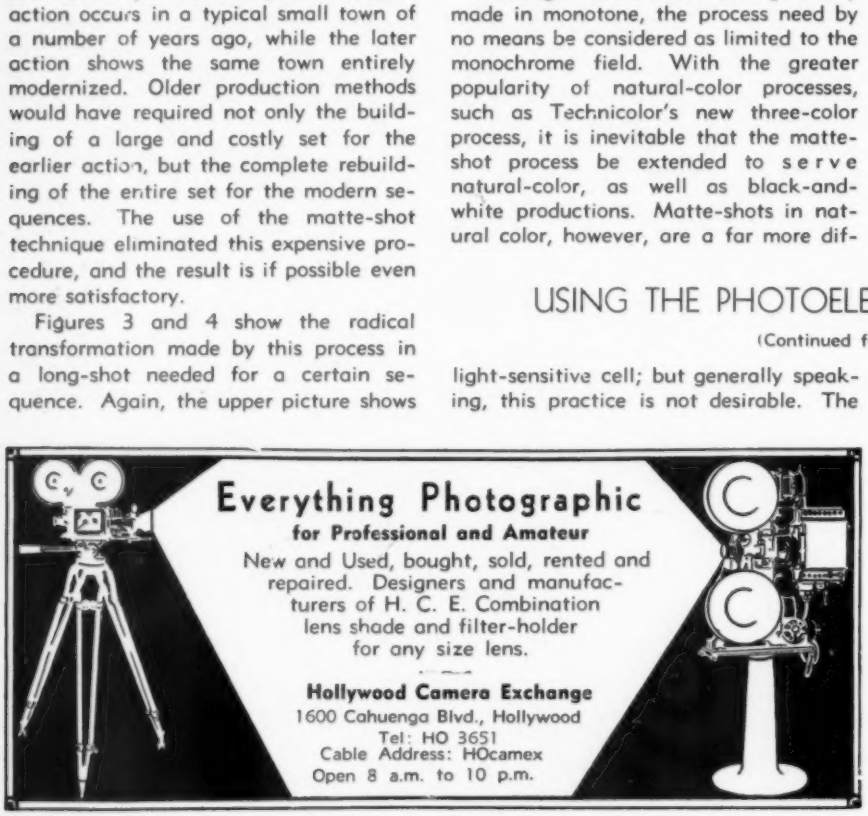
Although matte-shots are generally made in monotone, the process need by no means be considered as limited to the monochrome field. With the greater popularity of natural-color processes, such as Technicolor's new three-color process, it is inevitable that the matte-shot process be extended to serve natural-color, as well as black-and-white productions. Matte-shots in natural color, however, are a far more difficult problem: not only must the perspective and detail of the original shot be matched perfectly, but also color-values and exposures. The matching of color is naturally complicated by the fact that the first exposure may frequently be made by natural light, while the matte-painting exposure is usually made by artificial illumination, which frequently gives different values to colors, while visually identical pigments and colors may often have vastly different photographic results. However, a careful study of the photographic reactions of colors, pigments, textures and lightings is being made, and perfect blends can now be obtained in technicolor matte-shots.

USING THE PHOTOELECTRIC EXPOSURE-METER

(Continued from Page 348)

light-sensitive cell; but generally speaking, this practice is not desirable. The reason for this is undoubtedly the delicate balance between the overall spectrum sensitivity of the photocell and of the film. It may be regarded as almost axiomatic that for normal purposes the color-sensitivity of modern super-panchromatic emulsions is very similar to that of the human eye: but this similarity is only approximate, and by no means exact in detail. The human-eye "Visibility Curve" begins very flatly in the violet region, begins to rise sharply in the blue-green (approximately 480 mu), thereafter rising to a high peak in the yellow-green region (575 mu), and dropping rather rapidly through the yellows, orange, and red, cutting off sharply at 700 mu. The photocell color-sensitivity curve, on the other hand, begins well in the invisible ultra-violet region and ascends evenly to a peak in the yellow (580 mu), thereafter almost paralleling the decline of the visibility curve, though appreciably farther into the red end, and retaining a low color-sensitivity for red and even into the infra-red. The spectral response of the average present-day super-panchromatic emulsion, on the other hand, rises sharply from the border of the ultra-violet, and maintains a uniformly high sensitivity to the blue, blue-green, green, and yellow-green, rising to a peak in the orange and red regions, and maintaining considerable sensitivity through the reds and into the border of the infra-red.

For practical purposes, all three of these curves coincide sufficiently so that the exposure-meter furnishes a good, practical guide for unfiltered exposures. Similarly, the lighter yellow and yellow-orange filters—up to, that is, the "G"—do not cut out enough of the wavelengths to which the meter is most strongly sensitive to seriously affect the accuracy of readings made in connection with these filters. In other words, for these lighter yellow filters, up to and including the "G," direct filtered read-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ings of the meter may be taken as accurate.

Readings taken through the deeper red and night filters are definitely misleading. As has been shown, the peak of the photocell's spectral-response curve is in the yellow region, around 580 mu, after which the cell's response to color falls off rapidly, being approximately 45% at 650 mu (the verge of the red area), and dropping rapidly to less than 10% at 700 mu (the farther end of the red). At the same time, the film reaches its greatest sensitivity in the neighborhood of 650 mu (which is a strong red), and maintains considerable sensitivity throughout much of the visible red area. The more common red filters absorb all wave-lengths below 575 or 600 mu, and accordingly block out the majority of the light to which the photocell is most sensitive.

Therefore, exposure-meter readings made through such red filters cannot but be inaccurate. In tests made by the authors, these inaccuracies were found to be at least a stop and a half, and sometimes even greater. Therefore, when using the red filters the normal, unfiltered exposure-meter reading should be used in conjunction with the filter-factor and filter-exposure tables published by the film manufacturers. For this, naturally the most convenient type of chart to use is one which reads di-

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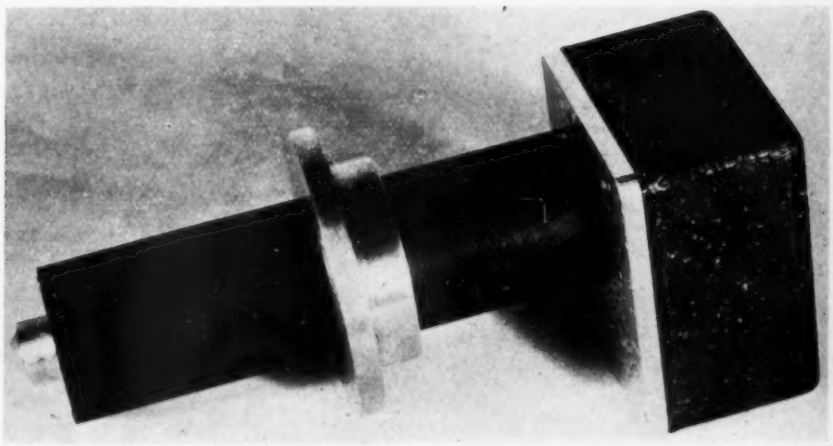

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This galvanometer and optical system may be readily installed in any recorder or camera now equipped with a glow lamp. It eliminates film developing difficulties, increases recorded frequency range, reduces operating costs and simplifies operation. Each unit is supplied with individual frequency calibration and is unconditionally guaranteed, regardless of footage recorded, to operate efficiently and satisfactorily for one year. Price, complete, $350 in U. S. A.

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rectly in terms of exposures, based on definite normal, unfiltered exposures.

When making filtered night-effect scenes, by far the most effective method is to follow such a table, basing your proceedure upon a normal, unfiltered meter-reading, and modifying your exposure according to the result desired.

For all normal work, including filtered and unfiltered scenes made through haze, light fog, and the like (using the lighter filters), we have found the readings of photocell exposure-meters extremely accurate, and a very definite benefit to the production cinematographer.

PATENT DEPARTMENT

● We have arranged with JAMES ATKINS, registered patent attorney, Munsey Building, Washington, D. C., to furnish us with a memorandum of the recently issued patents relating to improvements in our industry.

Inquiries with reference to this subject should be addressed to the Editor of the Patent Department, where they will receive prompt attention.

CAMERA SUPPORT. No. 1,977,154. Issued Oct. 16, to John L. Spence, Jr., Brooklyn, N. Y., assignor to The Remac Patents Corporation, New York City.

APPARATUS FOR PREPARING FILMS. No. 1,977,166. Issued Oct. 16, to Anthony G. Wise, Beverly Hills, Calif., assignor to Metro-Goldwyn-Mayer Corporation, Culver City, Calif.

CINEMATOGRAPH AND SYNCHRONIZED SOUND REPRODUCING UNIT. No. 1,977,293. Issued Oct. 16, to Abraham Shapiro, Chicago, Ill., assignor to Universal Stamping & Mfg. Co., Chicago, Ill.

SOUND RECORD COMPOSITION AND METHOD OF MAKING. No. 1,977,940. Issued Oct. 23, to Fritz Frank, Berlin, Germany, assignor to the firms Hanseatische Muhlenwerke Aktiengesellschaft, Hamburg, Germany, and Polyphonwerke Aktiengesellschaft, Berlin, Germany.

SOUND REPRODUCING APPARATUS. No. 1,978,183. Issued Oct. 23, to Ernst F. W. Alexanderson, Schenectady, N. Y., assignor to General Electric Company.

MOTION PICTURE PROJECTION METHOD AND APPARATUS. No. 1,978,250. Issued Oct. 23, to James J. Dilks, Jr., Philadelphia, Pa.

FILM TREATING APPARATUS. No. 1,977,753. Issued Oct. 23, to George C. Beidler, Rochester, N. Y.

REEL. No. 1,977,880. Issued Oct. 23, to Hilyard C Howsam, Chicago, Ill., assignor to Hubbard Spool Company, Chicago, Ill.

METHOD OF TREATING CUT FILM No. 1,976,311. Issued Oct. 9, to Henry E. Van Derhcef, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y.

MOTION PICTURE PULL DOWN MECHANISM. No. 1,976,338. Issued Oct. 9, to Edwin C. Fritts, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y.

AUTOMATIC SELF-ERECTING FRONT CAMERA. No. 1,976,339. Issued Oct. 9, to Carl C. Fuerst, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y.

CONTROL FOR A PHOTOGRAPHIC RECORDING APPARATUS. No. 1,976,346. Issued Oct. 9, to Carter J. Hughey, Rochester, N Y., assignor to Eastman Kodak Company, Rochester, N. Y.

HENRY GERRARD DIES

As a result of an operation for appendicitis, Henry Gerrard, A.S.C., died last month. Gerrard was one of the ace cameramen at the Radio studios. He was responsible for the photography on "Little Women" and before entering the hospital had finished the picture "Little Minister."

Only a few months ago Mrs. Gerrard passed away and within the past year he lost several other close relatives.

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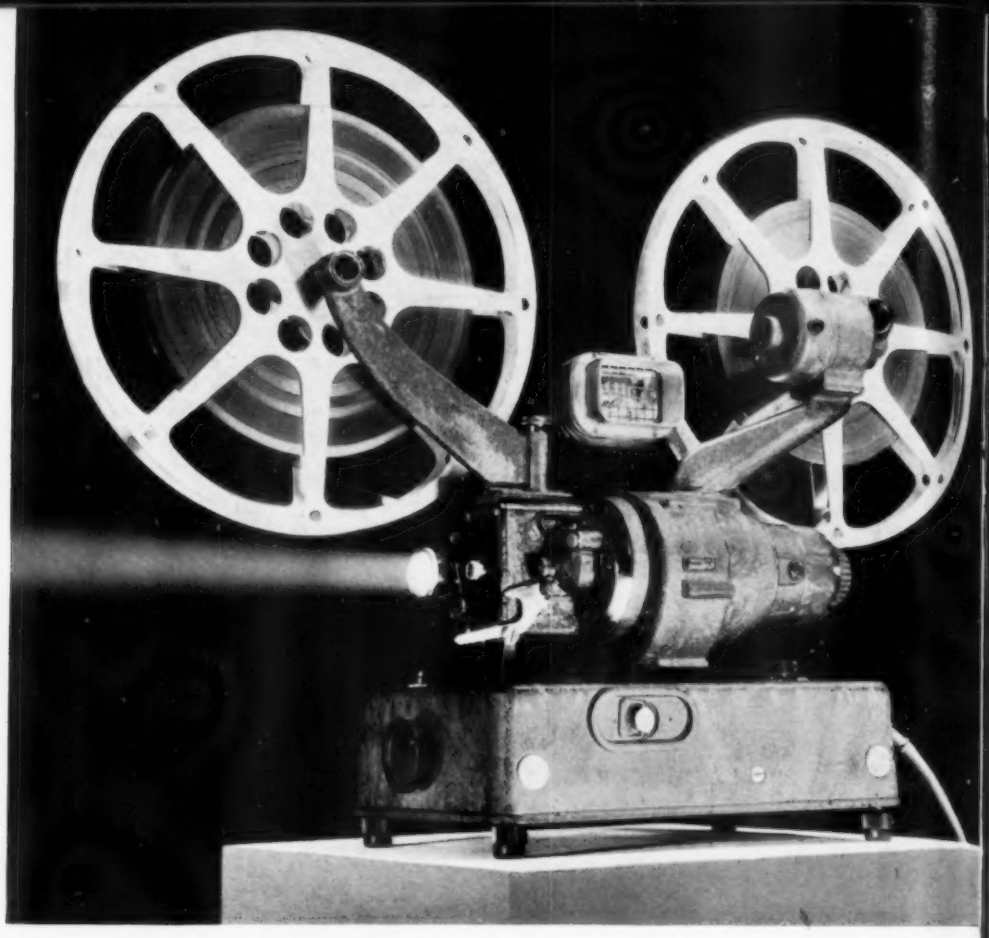
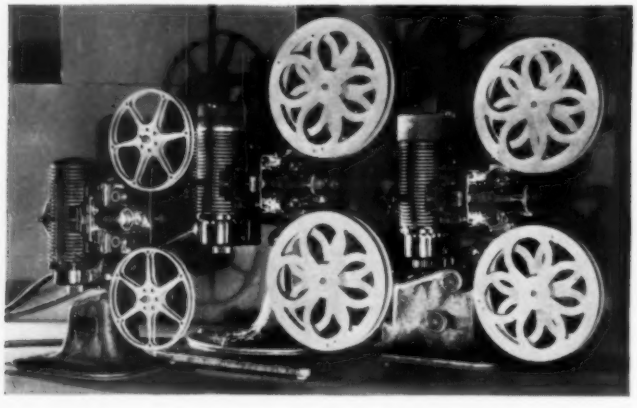


1. 1000-WATT—MODEL 130 *(illustrated above)*



THE new Filmo 1000-watt 16 mm. Projector marks a major advance in 16 mm. equipment, extending the use of safe, economical 16 mm. film into large auditoriums where heretofore only 35 mm. film would serve. So efficient is its new optical system that our tests show it gives 80% greater screen brilliance than 750-watt projectors, although the lamp wattage increase is but 33⅓%. A new cooling system keeps the 1000-watt lamp within its maximum safe temperature. 1600-foot film reels are accommodated—a one-hour show without interruption! Features include new streamline base giving low center of gravity, and completely new arrangement of controls. Complete details upon request. Price $385.

FILMO 8 MM. PROJECTOR

(Left, above). Shows brilliant, steady, flickerless 8 mm. movies up to 6 feet wide. 300-watt lamp. Gear-driven—no chains or belts. Power rewind. Pilot light. Stops for still pictures. Fast Cooke F 1.6 lens. Manual framer. Full film protection. B&H precision mechanism in rigid, non-warping, die-cast aluminum housing.

FILMO R PROJECTORS

(Center). Three moderately priced models—500-watt, 750-watt, and 750-watt with variable resistance and voltmeter. Have power rewind, manual framer. May be run backward and stopped for still projection. Superior Filmo design and construction throughout.

FILMO JS PROJECTOR

(Right). 750-watt lamp, variable resistance, and illuminated voltmeter. Fully gear-driven—no chains or belts. Power rewind, manual framer, fast Cooke F 1.65 lens, and pilot light.

2. 750-WATT—MODEL 129

Similar in general appearance to the 1000-watt model pictured above, the new Filmo 750-watt Model 129 Projector also has a new, low, streamline base and a 16 mm. film capacity of 1600 feet. It is a moderately priced projector for use in home, school, and wherever full 1000-watt illumination is not required. Details soon to be available.

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AMATEUR MOVIES

this issue

1924 Prize Winners
Wipe-off with Splicer
Talk on Lenses
Effect Lighting
. . . and other features

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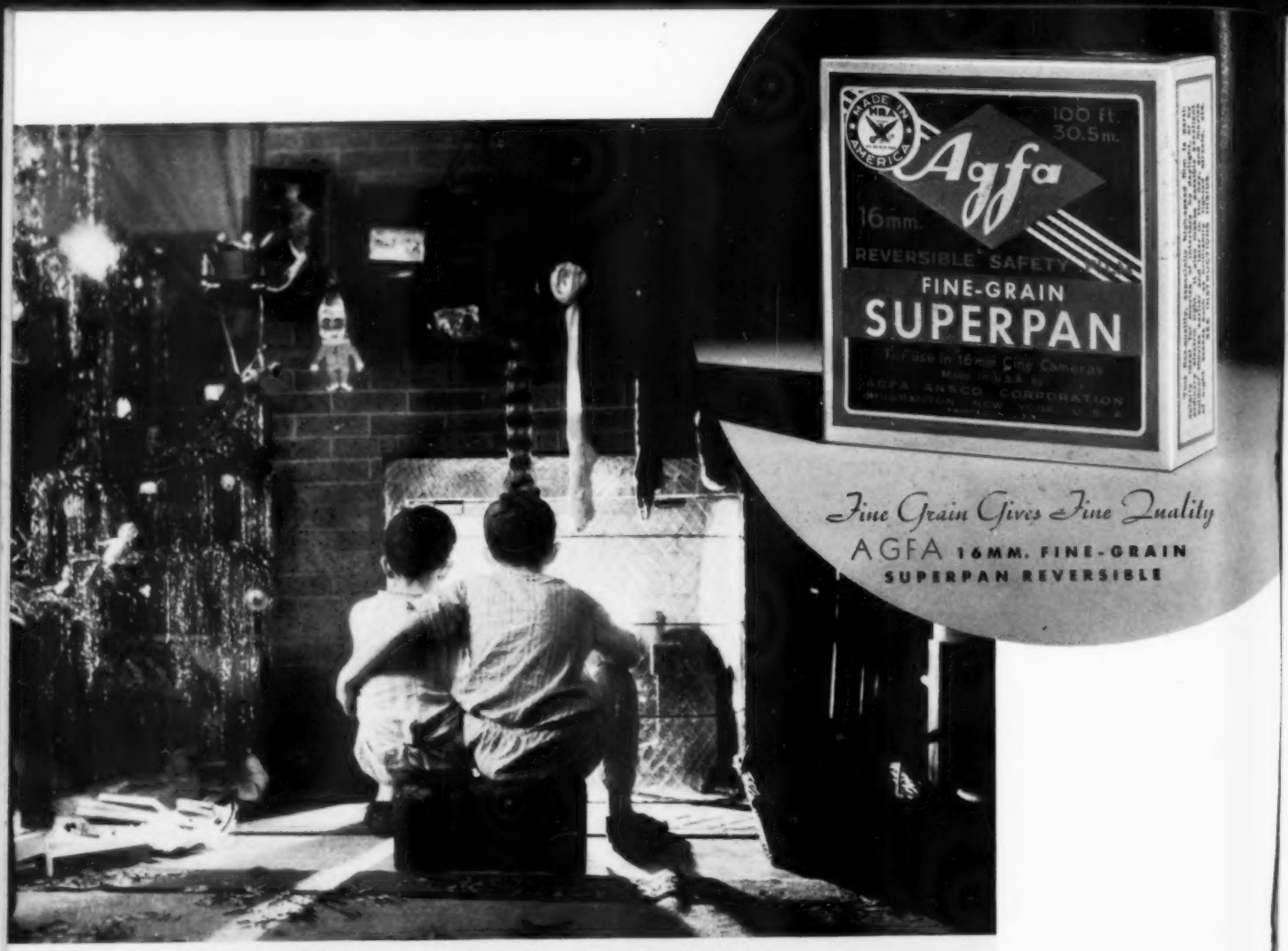
DECEMBER,
1934



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PROFESSIONAL Criticism of the Amateur picture is a part of the service offered by the AMERICAN CINEMATOGRAPHER. Many are not aware of this. Hundreds of pictures have been reviewed this past year by members of the American Society of Cinematographers for the Amateur.

AMATEUR MOVIE SECTION

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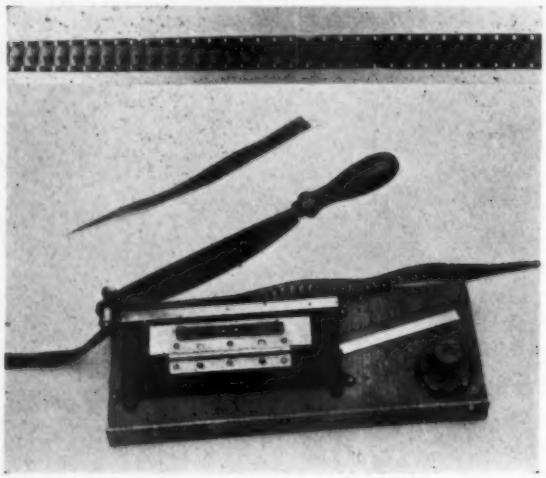
Next Month . . .

● Among other interesting items we will give you the winners of the equipment prizes . . . we will also let you know who are included among the list to receive honorable mention. Unfortunately it was impossible to complete the judging to give all of this information for this month because of the great number of entries the judges had to go through.

● Another interesting indoor lighting will be given by a member of the A.S.C. He will touch a little on the practice of the studios.



At top the wipe off made by the gadget shown below.

Wipe-off Splicer for 16mm Films

by **Chas. G. Clarke, A. S. C.**

DURING the editing of my 16mm films many instances arose where some form of dissolve would smooth the continuity of action and thought. Striving for a simple device, I discarded ideas that called for elaborate optical printing apparatus and started to build a splicer to make a long diagonal splice, which on the screen would produce a "wipe dissolve" effect.

The splicer is herewith illustrated. As can be seen, it was built up from an inexpensive metal print trimmer. Near the cutting edge, four pilot pins were located to hold the film at a uniform angle to the knife, and prevent slippage as the cut was made. The ends of both films to be spliced are cut on this angle. A metal guide strip has been provided that drops down over the film to flatten and hold it during the cutting process. This strip also forms the scraping guide to determine the correct amount to be neatly scraped off for the splice. An ordinary scraping edge is used, but the device can readily be adapted to use a dry scraper attachment. After the films are cut and scraped they are ready to be put on the "patcher," which is a long bar with eight pins to correctly register the perforations. The scraped edge is put on the pins, cement applied, and the other end quickly located and the pressure device applied. Carefully made, these splices are as strong as any, can be wound and rewound, cleaned and projected the same as ordinary film.

The splice as I have made it requires 14 frames to pass from one side of the picture to the other, and the effect on the screen is one of a quick wipe, i.e., one scene travels off the screen as another takes its place. As can be realized, any combination of scenes can be joined; titles to scenes, scenes to inserts, etc. Interesting effects can be obtained such as utilizing an exit from a scene; the splice being made just behind the person leaving the scene. Thus made the next scene will follow across right behind the one leaving the previous scene. If the splice is not timed just right the first time, it can be remade a few frames, and tried over.

I am sure that this device will prove a valuable aid in giving the amateur film the professional touch, smooth over sudden jumps to new scenes, and otherwise lend variety to the finished picture. Films made long ago can be dressed up with new "wipe-offs."

Patent has been applied for the idea and device and should sufficient demand arise it will be put on the market to sell at a reasonable price.

Fades and Dissolves

by **Harry Walden**

HUMAN nature abhors shocks. Hence the fade and the mix, sometimes termed the lap dissolve. If it is desired to induce a sense of quiet into a film the gradual fade out followed by a gradual fade in will achieve the desired effect much better than the abrupt cut from one scene to another. In the same way pictures which dissolve into one another preserve the even tenor of the film.

Professionals have a number of ways in which such effects may be achieved but, in the main, the amateur is restricted to the use of the diaphragm of the camera lens. In order to fade out the diaphragm is slowly closed at a prearranged point in the picture, while the fade in is similarly effected by slowly opening up the lens. For a dissolve the first picture is faded out and after the film has been rewound in the camera to the beginning of the fade the second scene is faded in on the same piece of film, thus producing the gradual transition from one picture to the next.

Simple as the method may be it has its difficulties. First there is the difficulty of closing or opening the diaphragm at the requisite speed. Failure in this respect will mean that the fade is unnaturally fast either at the beginning or the end of the change. There is also the other difficulty that amateur reversal film is automatically controlled in the processing to overcome errors in exposure. So that as the fade commences the machine does its level best to overcome what it conceives to be an error in exposure on the part of the photographer; and the result is literally a "wash-out."

The amateur has, however, other means at his disposal for obtaining smooth transitions from scene to scene. These involve a certain amount of planning in the making of the picture. A station name-board, announcing the location of the film, can disappear in a cloud of steam and, as the steam clears, there is revealed the scene either inside or outside the station. There are several ways of achieving such a result. The first, of waiting for the steam, will

(Continued on Page 379)

8mm Pictures Take Honors in 1934 Competition

AGAIN the lowly 8mm picture receives the plaudits and prizes most coveted in the 1934 AMERICAN CINEMATOGRAPHER Amateur Movie Contest. Last year one 8mm picture was among the winners; this year there are two, both of them definitely standing out above all other entries.

Many of the pictures entered were evidently produced as a definite subject for this contest. This meant that there were a great number of worthy productions to be considered by the judges.

Again, practically every civilized country on the globe was represented, and again some of the prizes will go abroad and into Canada.

In the final summing up all possible classes are not represented among the listed winners. This was for one of two reasons: either there were no entries in that class or the quality of the entries in that class did not warrant the honor a prize given by the American Cinematographer represents under its method of judging.

It will be remembered that last year it was established that a picture must average at least 85% in order to be considered a prize winner. Based on this rating the final summing up brought forth prizes for eight classifications and an additional prize for photography. Those classifications represented are Home Movie, Scenic, Documentary, Kodacolor, Educational, Scientific, Travel, and Scenario.

The $250.00 prize for the best all around picture went to R. B. Clardy of Los Angeles for his 8mm picture "New Horizon," made in 200 feet. Clardy was the winner last year of the gold medal for scenario and photography. Last year Clardy's picture was based on a western theme, while this year his scenario, although set in its greater part in the outdoors had several indoor shots. However, most to be admired was the way in which he handled his production both from composition and directorial standpoint. There were only three people in his cast with the girl assuming the major role. His sense of dramatic values, and especially his fine feeling for the proper tempo brought forth unstinted praise from the judges. His photography rated high for 8mm film, but was not quite up to the very fine photography of Tatsuichi Okamoto of Japan.

Okamoto two years ago won the prize for photography with his 16mm picture "Early Summer." Since then he has turned to the 8mm camera. His picture "Tender Friendship," in 150 feet of 8mm film, was sensational from the photographic standpoint. Its sheer beauty, its poetic rhythm both in story and photography, made it one of the outstanding pictures of the contest.

WINNERS

GRAND PRIZE, $250.00 . . . R. B. Clardy, Los Angeles, Calif., for "New Horizon," 8mm, 1 reel.

PHOTOGRAPHY, $100.00 . . . Tatuschi Okamoto, Matsuyma, Japan, for "Tender Friendship," 8mm, 1 reel.

HOME MOVIE, $50.00 . . . Van Dee Sickler, Los Angeles, for "Mischief," 16mm, 1 reel.

SCENIC, $50.00 . . . J. Sherlock, Sydney, Australia, for "The Brook," 16mm, 1 reel.

DOCUMENTARY, $50.00 . . . Leslie P. Thatcher, Toronto, Canada, for "Another Day," 16mm, 1 reel.

KODACOLOR, $50.00 . . . Miss Roanna W. Hill, Pittsburgh, Pa., for "October," 16mm, 1 reel.

EDUCATIONAL, $50.00 . . . H. Demarest, Hackensack, N. J., for "The Story of Water," 16mm, 1 reel.

SCIENTIFIC, $50.00 . . . M. Abraham Shur, Bronx, N. Y., for "Reconstruction of Nose," 16mm, 1 reel.

TRAVEL, $50.00 . . . John E. Earl, Los Angeles, Calif., for "The Traveler," 16mm, 1 reel.

SCENARIO, $50.00 . . . R. B. Clardy, Los Angeles, Calif., for "New Horizon," 8mm, 1 reel.

While Okamoto would qualify for the photographic prize only, still the judges feit that his picture was deserving of more consideration and raised that prize from $50.00 to $100.00 in recognition of his unusually fine photography.

"New Horizon" by Clardy and "Tender Friendship" by Okamoto, both made on 8mm film, were unanimously voted the two outstanding pictures in the contest by the judges. As is known, the judges in this contest are members of the American Society of Cinematographers, the ace cameramen of Hollywood's studios. Many of them are users of 16mm and 8mm cameras. They are familiar with the problems that confront the amateur with the equipment available to them, and are appreciative of the results attained by the amateur because they have had experience in the professional field as well and know what is possible at both extremes.

This does not mean that there was not some very fine work and commendable work done on 16mm. There was photography and technique on this larger sized film that drew much admiration. Many of the pictures this year showed a high degree of smoothness and efficiency in special effects, such as fade-outs, lap dissolves, wipe-offs, etc.

So as to understand the thoroughness with which each picture is considered the judges on viewing the picture give it a rating for the following points: photography, composition, direction, production technique, story, titles, editing, acting and entertainment value. Immediately after each picture is viewed, while all of the details of the production

(Continued on Page 376)

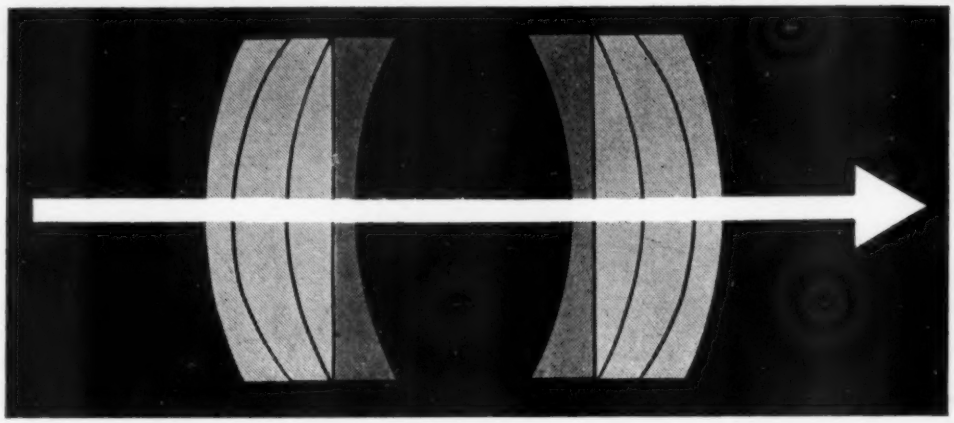


Fig. 4. The Zeiss Protar type of anastigmat shows the first attempt at correcting both chromatic and spherical aberrations by using glass having different indices of refraction.

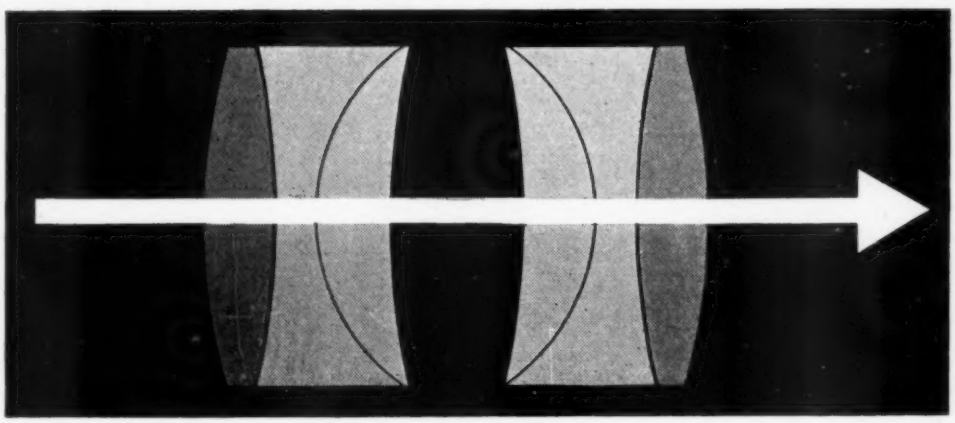


Fig. 5. The Goerz Dagor type of anastigmat consists of fewer elements than the older protar, and is therefore a faster lens.

Let's Talk

WE COME now in our discussion of lenses to the type of photographic objective which is responsible for modern photography — the anastigmat. No matter if our film progress had advanced to its present status, we should still be in the dark ages of photography if we did not have the anastigmat.

In our study of lenses in the two preceding articles we learned, at least in a cursory way, of the many faults of lenses. And, so many of these various faults are difficult to correct without running into still worse troubles. If we correct for color aberration, spherical aberration is made worse. If we correct spherical aberration and its many phases, such as coma, astigmatism, and distortion, the color aberration is made worse.

As soon as lens designers had exhausted every scheme to correct both major faults at once by surface shapes alone, they turned to the idea of using different kinds of glass which had different indices of refraction. There were possibilities in juggling a combination of lens shapes and lens materials, and with advancement even up to this writing still proceeding in the manufacture of glass for optical purposes, the problem of making a lens corrected for all faults at once neared the solution.

Probably the first lens to appear which was corrected for both chromatic and spherical aberrations was that brought out by Zeiss in 1895. Figure 4 is a sketch of this type of lens. In reality, this was a combination lens so made that the front set of glasses or elements could be used by itself, or the rear set by itself, or both sets at one time. By making each set of different focal length, it was really a three-focal-length lens. However, the relative aperture was fairly small, f/6.8, even with both lenses used together, and the speed still less if just one or the other lens was used.

Since the more surfaces light must pass thru in a lens the more will be the loss from reflections from these surfaces, it is wise to cut down the number of elements to the bare minimum. The Goerz Dagor type of lens, sketched in Figure 5, is a good example of how fewer elements are combined in such a way as to allow of proper correction.

In the Dagor, the two sets of elements are similar and the diaphragm is placed midway between the two sets. Chromatic and spherical aberrations are corrected by virtue of the fact that the outer elements of each set are made of the newer glass and the others of the old glass.

A still further step in refinement of the ansatigmat is the result of the fine designing of H. Dennis Taylor of a lens now famous—we know his lenses by the trade name of Taylor, Hobson, Cooke. The reputation of these lenses is due, in part of course, to the excellence of workmanship, but more largely to the principles of design.

If it were possible to build a perfectly corrected lens of but one element, and if that shape might be possible to manufacture economically, the lens designer would consider it the millenium. Since that is impossible, the goal of perfection must be approached as closely as possible in other ways.

We know that it isn't so much the thickness of the

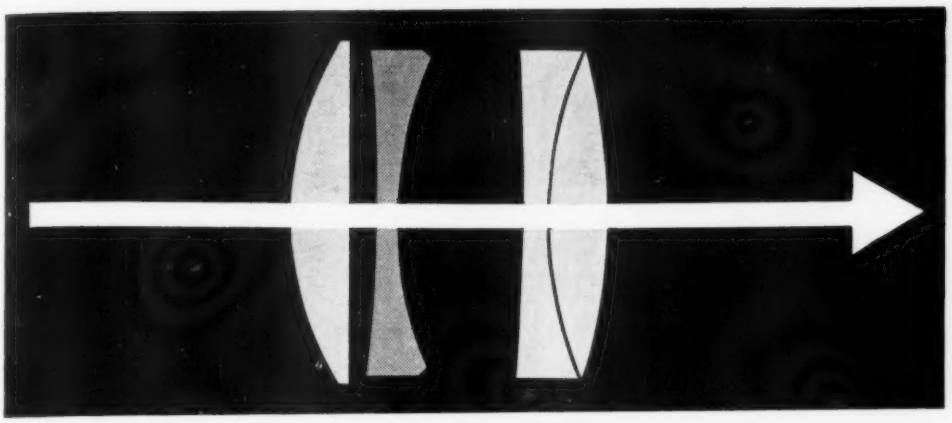


Fig. 6. The simplest form of the anastigmat is shown by the Cooke Triplet. Note the lack of cemented lenses and the clean-cut appearances of the combination.

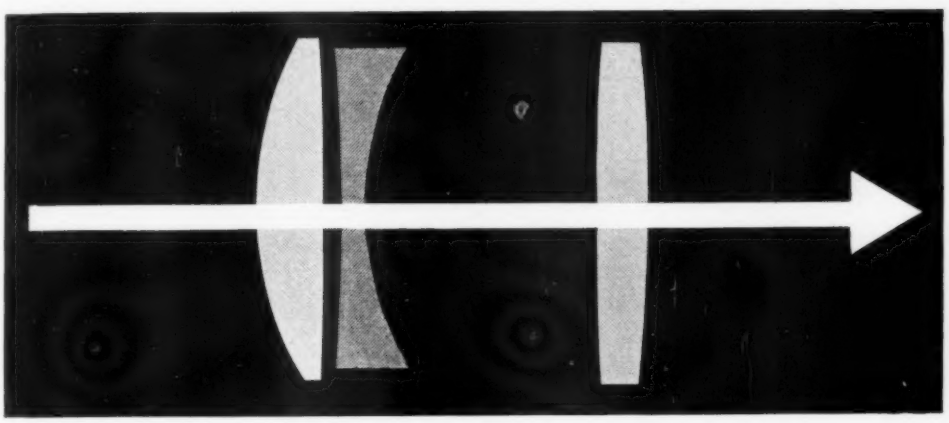


Fig. 7. The most popular form of the anastigmat is the Zeiss Tessar, which is similar to the Cooke Triplet except for the rear element which is a doublet in the Tessar.

About Lenses
The Anastigmat Lens

by

Wm. J. Grace

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glass in the elements of a lens that "holds back" light as it is the loss caused by reflections from each air-glass or glass-air surface thru which the light passes. Therefore, one of the first principles in the design of a lens is that as few surfaces as possible be presented to the transmitted light. A second consideration is to so choose a design that does not require cementing lens elements. In ordinary climates the cement is quite satisfactory, but in damp, tropical climates, a lot of trouble may be experienced from lens elements becoming uncemented.

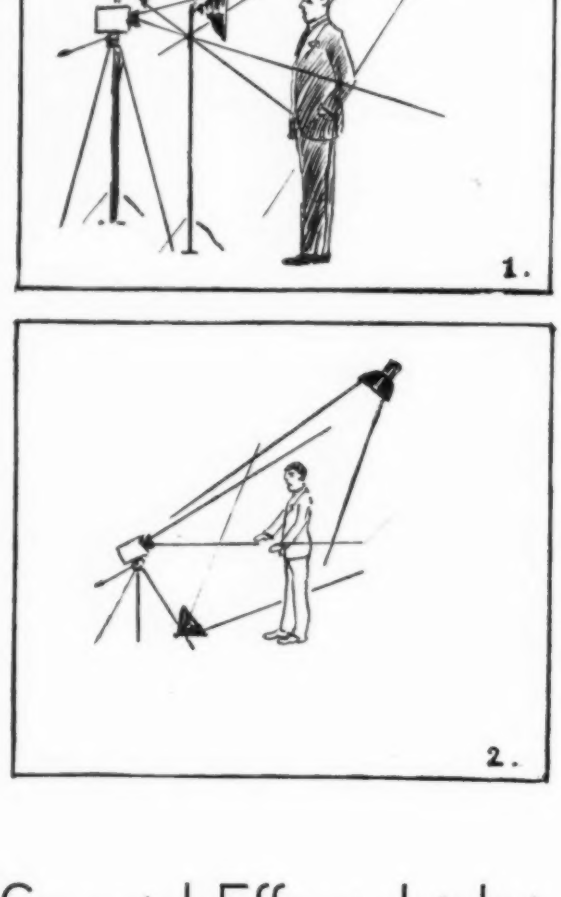
Now suppose we look at Figure 6, which is a sketch of the Cooke Triplet form or type of anastigmat. In this lens astigmatism is eliminated by power or magnification of the negative element (the middle element in the sketch) equal to the sum of the powers of the two outer or positive elements. Chromatic aberration is corrected by making the negative element of a glass which has the proper index of refraction. The shape of the surfaces of this element is also made so that spherical aberration and coma are corrected.

If we but consider for a moment the design features of the Cooke Triplet, it will be apparent that it is really a remarkably fine piece of work. In the first place, the lens has but three elements, thus making it possible to actually get more light thru the combination than thru some other combinations of the same diameter which use more elements. And because the physical size or diameter of the lens is kept to a minimum with respect to the "speed" of the lens, there is inherently less astigmatism, spherical aberration, and coma. In the second place, because there is no cement to deteriorate, it can be used in any climate.

Nor is the Cooke Triplet confined entirely to ordinary photographic fields. Because of its high correction, particularly in the matter of yielding a flat image field, it is quite extensively used in photo-engraving processes because of its freedom from distortion and because it "cuts sharp to the edges of the plate or film."

Sometimes a fault is deliberately introduced into the design of a lens. This is perhaps best illustrated by the series of Cooke Triplets designed for portraiture. Portraits are never absolutely faithful reproductions of the physiognomy of the subject, and this goes for photographic portraits as well as those done in oils. To be pleasing, a portrait should surround the subject with a subtle aura of illusory

(Continued on Page 377)



1.

2.

Special Effect Lighting for the Amateur

by

Arthur J. Campbell, A. S. C.

YOU'RE going to get a big kick out of indoor photography when the desire creeps into your photographic heart to attempt some special effect lighting on your subjects.

When that time comes you are on the high-road to becoming a true photographer; then you are going to burn the midnight oil and the kilowatts to create and reproduce artistic effects.

You'll learn how to make an ordinary looking subject beautiful, how to distort, how to dramatize and how to interpret moods by means of lights.

But let's start with some of the simpler and basic special effects procured with lights and their manipulation. There is the fireside effect, silhouette effect, the dramatic low lighting and the night effect.

The fireside effect is possibly among the simplest you can do and at the same time one of the most pleasing. It will be found particularly useful for your Christmas story. The basic lighting for this effect will also give you a silhouette which is of course an essential part of the picture in order to make the fireplace predominate in the scene. With a couple of photoflood lamps in the fireplace and your subject in front of these lamps to prevent them reflecting into the lens you have made the first step in this particular bit of special lighting. It is necessary, however, to have a certain amount of front lighting; this must be very faint. This light is used to keep your subject from becoming inky black. This front light is secured from a lamp alongside of the camera.

In a scenario the value of a dramatized low lighting can be clearly felt. The main source of light in this effect should come from a point near the floor somewhere underneath the lens of your camera. In a close-up when this type of lighting is used the reflection of some small subsidiary light in the eyes of the subject adds much to the scene. Sketch 2 gives you a basic lay-out for the low-lighting effect. In the long shots using this effect shadows are of utmost importance; very often the most dramatic scene can be most convincingly portrayed by shadows alone. To properly perform the shadow effect the main source of light must come from the side. In order that the shadows fall in the right lengths in your scene it is necessary that you first experiment with your lights. In placing the lights for shadows, try also for sharpness in the shadow.

About the most common indoor night effect is that of having one of the actors switch off the light which in the set is supposedly the source of all light. To make this effect convincing perfect co-ordination is necessary. However, when an extensive switch system isn't possible there is another method of producing the effect. It, perhaps, can be made more convincing with the use of a K 3 filter. Using the filter like a fading glass, slide it in front of the lens as the light on the set is turned out. This method is more natural, for the scene doesn't become completely black.

In portraying night scenes of indoor shots you of course want your light fixtures to photograph as being lit. To make the fixture lights give the effect of lighting up the set place in them 250-watt lamps.

The effect of lightning flashes as seen through a window of your set can be easily made with flash-light powder. However, it is important that only a small amount of the powder be used, for any reflection into the lens of your camera will light-streak the film.

Of most importance in all indoor lighting is the use of backlighting. It is backlighting that takes that terrible flatness out of photography. With good backlighting photography obtains some semblance of the third dimension (depth). Backlighting separates your subject from its immediate background and adds much to the realism of the set. Sketch No. 1 gives the fundamental diagram on which all backlighting is based. Try a little backlighting in the next indoor scenes you make; the actual test will prove to you its great value.

Another important matter is the diffusion of your lights. In using a minimum number of lights to obtain the minimum exposure you will often find that the features of your subjects photograph rather harsh. This can be corrected by using a diffuser. By placing a diffuser such

(Continued on Page 380)

WHEELS OF INDUSTRY

Reeve Spot Light

● Arthur Reeve, former cameraman and now operating the Hollywood Motion Picture Equipment Company, has announced a new reflector and stand to take the popular photoflood lamps.

This Artreeve lamp is made of spun aluminum, but the unusual feature of it, according to his announcement, is the fact that when it is fitted with one of the small 25c photoflood bulbs it acts as a spot light, but when the larger photoflood bulb is used it becomes a regular flood light.

When this lamp was set alongside of a regular studio lamp which used a 1000-watt light the spot light penetrated through the studio lamp and definitely illuminated a section within the radius of the larger lamp.

New 8mm Projectors

● The great advances being made by the 8mm film among amateurs throughout the world has undoubtedly prompted the Eastman Kodak Company to improve their 8mm projectors.

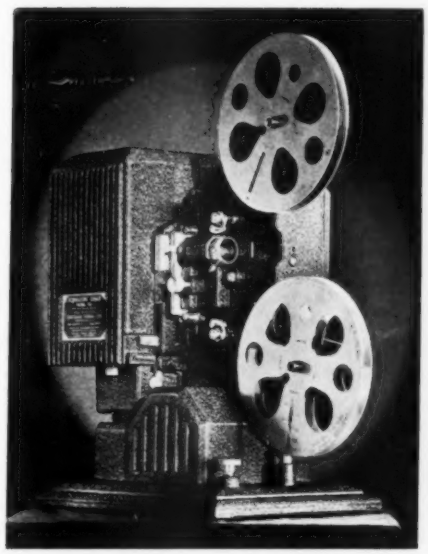
Announcement made by them this week tells of their Model 90 projectors, termed a de luxe projector for 8mm film equipped with a 300-watt lamp. This model will supersede their present model 60 which is equipped with the 100-watt lamp.

In addition to this they announce a new Model 40 replacing former Model 25. Model 40's main point of difference as compared to its predecessor is, that it has been redesigned to use a 200-watt lamp instead of a 100-watt. The price, however, will remain the same as Model 25.

Model 20, the simplest and least expensive member of the 8mm family, will remain the same.

The interesting item of these three is the new model 80 with its 300-watt lamp. According to the announcement this will sell for less than one hundred dollars.

From 8mm pictures seen with 300-watt lamp projectors it is evident that the 8mm film will now prove a bit faster to the user than formerly. Evidently the lack of proper light has compelled the user to shoot at a lower normal in order not to secure a heavy negative.



New Eastman 8mm Projector with 300-watt lamp.

16mm Continuous Printer

● The announcement of a 16mm printer by the Phillips Laboratory will be acceptable news to many amateurs using negative and positive.

This printer, according to announcement of L. E. Phillips, is of the continuous type. It is built for 60 cycle 110-volt A.C. only. It has a capacity of 400 feet and prints 25 feet per minute. Its light source is a 60-watt 110-volt lamp and the motor is the induction type.

Possibly one of the most ingenious features is the addition of a Veeder counter which registers film used in tenths of a foot. This counter can be used to cue the changes in the printing aperture. Before actual printing is done, the negative can be run through and the footage at the various changes noted and marked for use during actual printing. The printing pressure plate can be released for running film when measuring for cues to change the printing aperture.

The printing aperture is provided with a ruby light for inspection of film during printing and the printing aperture is variable, giving control of printing time by a calibrated lever.

The printer has a metal plate 10x15 inches mounted upright on a transite board 8x15 inches.

On the metal plate are mounted the two sprockets, one for each film, thus insuring registration and freedom from movement between the films during printing.

Oil Color Set

● To bring the price of transparent oil color outfits within reach of most any amateur interested in coloring his snapshot enlargements, Eastman Kodak Company announces a new 8-tube Kodak Transparent Color Set.

The eight standard colors, providing for a wide range of picture subjects, are: Chinese blue, warm brown, flesh, medium green, scarlet, violet, yellow and neutral gray. Transparent medium, stump cotton, skewers, and an instruction book are included in the attractive gift box, which is covered with a dark blue pig-grained material.

Photo Flood-Spot

● Photolites Inc. of New York City have combined in their latest piece of lighting equipment a very efficient and needed piece of lighting apparatus.

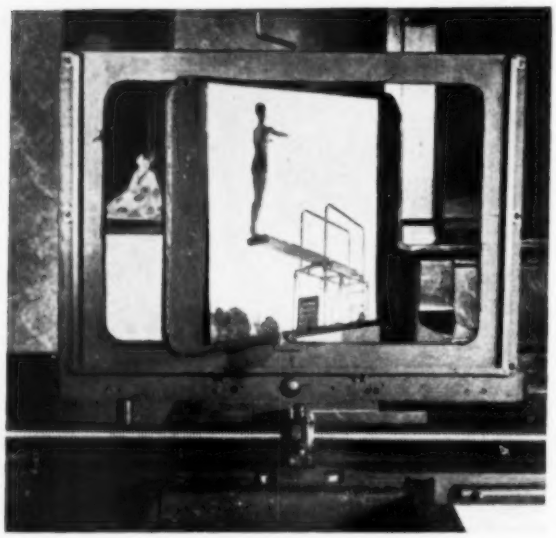
The name, Photo Flood-Spot, is very descriptive of its purpose. It acts both as a spot light and as a flood light with but little change in its attachments.

The Spot light, however, will be found mighty useful to the serious amateur. This piece of equipment had not been available to him at a moderate price. This light uses the regular Photoflood lamps which of course is another convenience to the amateur.

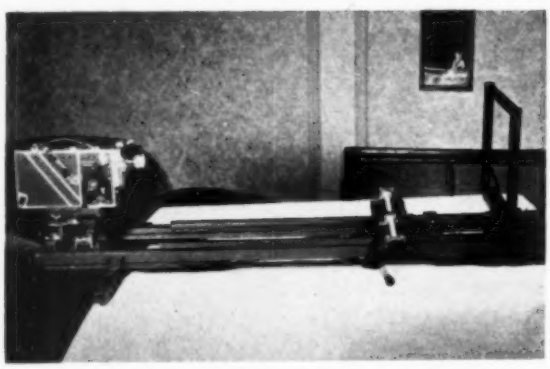
To change the size of the post one merely moves the focusing rod forward or backward. The light has an operating range of 2½ to 7½ feet in height.

This lamp will be found very useful by photographers who wish to secure concentrated lighting, backlighting and highlighting of hair and the other ways in which a concentrated light is demanded for good photography.

Home Made



Showing the "Insert" or "twist" in use. The "idler" screw, which steps the insert in the proper position, is not shown but the slot for this screw may be seen in the upper left corner of the insert. The wipe-off mechanism is shown "straddling" the top runners. Also note position of head of carriage bolt which holds the "Scroll" and "whirl" in position.



Showing distance from wipe-off device to "Holding" Board.

NOW THAT we have our titler finished and in working order (I hope you have tested it for correct adjustment), we can proceed to the actual business of titling.

In the first place, you will have to choose the kind of titles you wish to photograph. Perhaps you prefer the cut-out letters seen on business directories—the little gummed affairs. If these are used the titler will have to be suspended in a vertical position by means of hooks and eyes on the wall and one end of the machine. In this position, the letters may be laid out without sticking them on anything, and thus, may be used again and again. The machine must be used in this vertical position for anything that has to be "laid out" and depends upon gravity to hold it in position.

Perhaps you are handy with a brush or pen and prefer to make your own title cards, or maybe you will have them printed and do a really professional job. Typewriters, too, can be used easily, for, with the aid of auxiliary lenses the subject can be as close to the lens, with the correspondingly small field, as desired. But for our purpose here, we will assume that you have hand-lettered cards and that we will use the "reversal" method of filming. Obviously, the lettering is done in white on a dull black card.

First, cut a piece of the black cardboard to fit in the channels in front of the title holder board and the correct shape (3:4 ratio). Put the title on this card and shoot it at a distance of 30". (All "shooting" distances hereinafter referred to are measured from the center of the lens barrel to the title card.)

In order not to have to use such large pieces of cardboard for the titles, I made several masks with apertures of various sizes, always keeping the 3:4 ratio and always keeping the center of the apertures in the center of the lens axis so the shots could be "zoomed." Handy sizes will be found to include 6"x8", 4"x5-1/3" and 3"x4". The titles are held in place on back of these masks with Scotch tape or other adhesive, the masks slipped in the brass channels and the whole ready to shoot. Too, this method provides an outline for making the title. Fancy borders, etc., may be drawn on these masks and part of the mask itself included in the picture.

A table of field sizes for various distances is reproduced here for your information and guidance. Referring to the table, we see that an area 6"x8" will be covered with the title card 21" from the lens center, while at 31" the size has increased to 9"x12". If your lens will not focus to distances closer than two feet, you must resort to an auxiliary lens. These accessory lenses may be purchased from any reliable lens manufacturer, or, if you have a means of opening the camera and seeing the image on the film (there is a glass prism made and marketed for this purpose), you can try your own auxiliary lens. (Those possessing Cine Kodak Special cameras will, of course, not be troubled with areas since the image can be seen directly through the lens in the filming position.) The dime stores sell a small magnifying glass with a diameter of about 1½" and unknown (to me) power. These allow the title board to be brought into focus at a much closer distance than otherwise possible. Greater power brings the board still closer, and I have found that by using one lens out of an old rectilinear lens assembly that came on a discarded camera I happened to have, I could focus perfectly at a distance of 2" from the front of the lens. This lens is used for copying newspaper columns, etc., and, in the same manner as all auxiliary lenses, obtains a very effective "melt" by simply moving in or out of focus.

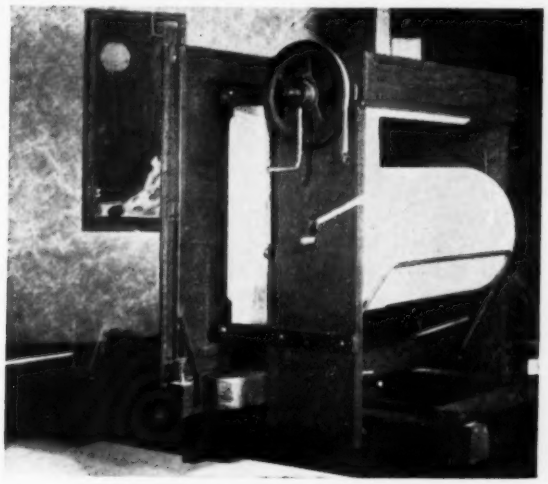
Since the matter of focus and auxiliary lenses and aperture sizes is a complicated thing to write about, I am going to leave this subject to someone more capable than I, and let my readers "cut and try" for closeups. What we are interested in here is tricking titles, so I'm going to imagine you have a camera like mine and go ahead from that standpoint, letting you work out your own variations.

THE "ZOOM" AND "RETREAT"

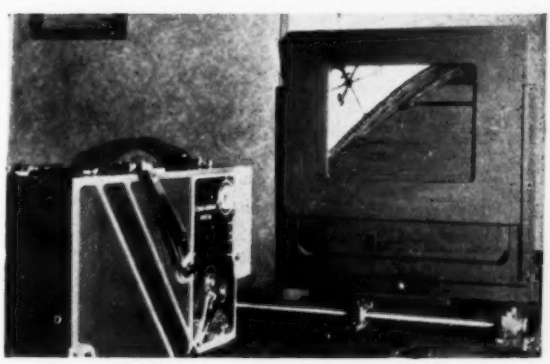
One of the handiest and most elemental of the title's tricks is the "Zoom" shot, which consists of starting the title a great distance from the lens and bringing it toward the camera until it has the proper size in the picture. The "ZOOM" may be filmed with a "follow-focus" or by means of presetting the focus on the final position and starting the scene out of focus. Personally, I prefer the latter since

Trick Titler
Simple Titling

by
Ed. Ludes



The "Scroll" in position—with front mask in place in front of holding board. The wire loop, held with springs on each side, keeps the supply roll from unwinding—the pulley and belt device at top keeps the take-up spool from unwinding and thus the paper is held flat over the front guides.



Showing mask in place, with "Insert" and a photo being slipped into position where it is held without adhesive.

it is easier to do, takes less thought and offers less chance of error in focusing.

To make a long "zoom" bring the title card as close to the lens as desired (about 10", giving a 3"x4" picture area). Focus the lens on the card at this point. Now back the carriage away from the camera to the end of the bed and have the area included in the lens at this distance all black except for the small title (which is hopelessly out of focus here). Put the lamps in reflectors back of the lens and train them on the final position of the title card and, starting the camera, bring the title in a fairly steady motion to the predetermined position of focus, taking not too much time for this operation.

On the matter of lighting all shots (including the zoom) it will be a great help to fasten two photoflood lamps in long upright reflectors on each side of the "wipe" device baseboard, making four lamps in all, and protecting the lens from glare. This way, the lights will be the same distance from the title board and the picture will have the same exposure in all positions, whereas, the way we have just taken our "zoom," the title will come out of darkness into light and into focus at the same time.

A "RETREAT" is the exact opposite of the "zoom" but may be handled in several different ways. First, we may focus (and light) our subject at a distance of three or four feet from the lens, then by starting the camera with the title close to the lens, we quickly slide it back to the predetermined position. Or, we may make the title appear to come into the scene from above by starting the same way except that when the title is close to the lens, the card is raised so that only black will show. As the carriage is moved away from the lens, the title card is dropped slowly (in its slots) until it finally comes into position as the whole reaches maximum focus. This last trick requires a steady hand and is a bit more difficult to accomplish successfully, but it can be done—and very prettily, too.

"BOMB" ANNOUNCEMENTS

We have all seen the effect used in theaters of making a "bomb" announcement—where a shell appears to explode on the screen and disappears, leaving a title or "announcement" in its place. This is a variation of the "zoom" and is accomplished on the titler in one of two ways.

First, the title may be set a predetermined distance away from the lens and left there for each exposure. The "bomb" is started by drawing a small shell starting to crack, exposing this for two frames, and substituting a slightly larger drawing of the bomb cracked still further and starting to fly apart. Keep the flying pieces in a fairly round circle and begin to show white in the middle of the bomb. The next drawing shows the pieces still further away and with the center showing white (imitating the gas which is to wipe in the bomb). Continue in this manner until five or six drawings are used. Allow two frames for each drawing. When the last drawing is shot remove the title card and substitute a completely white card. Expose three frames, then put the announcement in place and start the camera—taking at normal speed.

The second method is one which takes advantage of the "zoom" and is simpler to make. Put a large black card in the holder and expose several frames of this jet-black (or, simply hold the hand over the camera, altho the former is recommended since it matches the "depth" of the black background to the scenes to follow). This done, mark the position of the holder on the bed and bring it as close to the lens as you can possibly focus—the closer the better. In this position indicate the field area on the large black card and draw a picture of a "shell" pointing at you. This will consist, of course, of a plain circle, but with shading to its center to indicate the shape of the nose. Mark the position of the holder at this point and we are ready to make the picture.

Start exposing one frame at a time with the holder in its original position away from the lens and gradually moving toward the lens. Do not be in too much of a hurry to move the holder at first—an inch at a time is plenty. As the holder is moved and exposed you must match the movement with your focus. As the holder nears the closest point toward the camera it may be moved farther each time until the last movement brings it forward about two or

three inches. Remove the black card—substitute white and expose three or four frames. Move the holder to any convenient position and put the title in place and expose in normal fashion.

An improvement on the above would be to release a cloud of thick white smoke in front of the lens before shooting the title, letting it clear away and expose the title.

THE HORIZONTAL "TWIST"

We have seen how easily we can film plain titles, zooms and retreats, so let us proceed to the next bit of trickery, namely, the horizontal "twist."

Remove all masks from the holder board, and put the twist device into position in the board aperture. Affix the handle and insert the idler screw in the hole on the right hand top of the holder so the insert may be pushed against this screw and be parallel with the face of the holder. Prepare a title card such as:

Swimming, too, helped
pass the time—

and fasten it in position with Scotch tape, taking care that it is level, and centered. This done, lift the idler screw, start twisting the board anti-clockwise, dropping the screw as soon as the board has passed under it so that the other face may come into position.

On this side we affix a previously prepared photograph of a person on a springboard getting ready to dive. Align the photograph and shoot the scene as follows: Bring the title back into position. Focus carefully. After setting for proper exposure and lighting correctly, start the camera and press the trigger so it will keep running without your hand on the button. Allow sufficient time to read the title, then (being sure to be as steady as possible) lift the idler screw enough to release the board, twist it anti-clockwise neither too fast nor too slow—just "definitely." As soon as the board has passed under the screw let it drop into position and, continuing the swing of the twist, the picture will finally come to rest against the screw and in perfect plane with the holder. Fade out and stop the camera.

It would be advisable to rig up a piece of black material in back of the holder so that when the twist is swung nothing will be seen. With the scene as outlined thus far in your camera, you can still go a step further

Backwind the film (I hope you can) to the start of the fade, remove the camera from the titler, go out and find the board in the photograph and, shooting from the same angle, have the person in the photograph assume the same position he took for the other picture—start the camera and fade in—after which the person dives.

It sounds more complicated than it really is, but this outline will give you ideas from which you can get your own scenes and subjects. For instance, suppose we are titling a summer vacation picture and have already secured just such a shot of a man diving from a springboard. Have an enlargement made of the first frame of the scene (if it is clear and in fair focus and without too much blur due to movement) and, using this enlargement, proceed on the titler as already outlined with the exception of the fade-out. Cut the scene and title so that the title comes on, twists into the enlargement of the first scene and cuts into the scene itself. All tricky stuff—all easy to do—and all very mysterious, yet adding "life" to otherwise ordinary movie shooting.

Another use of the twist would be in working two titles into a scene. Suppose we are making a drama. The action calls for the following:

Two more laps to go—BUT—

WHAM!

The first part of the title can be printed on a card on one side of the twist, and the word "WHAM!" on the other Photograph as above. If desired, you can combine the "zoom" with this shot by "zooming" the word "WHAM!" —taking care to follow focus if you do. Sometimes it is effective to follow a "zoom" with a "retreat." For instance, in the case above, the word "WHAM!" could be followed by the word "ZOWIE!" in a retreat. Continuing with retreats and zooms we could draw stars—birds and anything else the idea could call for. This business could be cut into the picture to show a racing car bumping along with a flat tire, etc. Still another variation would be to combine a "retreat" with a "lift," that is, to have, let us say a "birdie" chirping merrily to show that someone has been knocked out. The drawing comes into the picture as a retreat and leaves by being withdrawn from the grooves of the holder with the camera running until it is completely out.

Learn to combine one stunt with another and the combinations will provide no end of fun, practicability and pep to your films.

THE "WHIRL"

This little device is for whirling titles and stopping to find a new title in its place. In use, it serves merely as a support for the title card, and because of its purpose no provision is made for slipping a card into a framework, as was done in the case of the title card holder. The way my whirl device is built now, it mounts on the back of the holder carriage by means of the same screw (carriage bolt) that holds the scroll. The insert (twist) is, of course, removed for this and the disc protrudes through the front of the aperture in the holder. Mount a SQUARE title card on the front of the disc by means of Scotch tape from the back of the disc to the back of the card. Have the title printed in the usual 3:4 ratio as far as shape is concerned, but keep in mind that as the title is whirled, the title stands on one end and what was the width becomes the length, and should, therefore, be black. This is the reason for using a square card.

To use, simply affix a title card as outlined above. Start the camera and after allowing time to read, start the whirl slowly, gaining speed and finally whirling fairly fast. If your camera can make double exposures, then fade out on the whirl with a FAST fade. Otherwise cut it. Bring the handle of the whirl back into position and change the title card for the title or snapshot, or whatever is to follow. If you are double exposing then backwind the camera to the start of the fade and fade-in on the following. Otherwise, simply start the camera while the new title is being whirled. This whirl is slowed down until the handle finally clicks into position and stops with the new subject in place. This is most effective if you can make a lap dissolve of the two whirls, but even without this added bit of perfection, the whirl is most effective.

Combinations of previous tricks can be used with the whirl, especially with a fade in and out device on the camera. For instance, fade-out on a title after it has started whirling and cut in cold on a retreat. Or use the whirl for a pinwheel effect in combination with the "birdie" gag described already. No need to take up space here to enumerate all the possible combinations—for a little thought on your part will suggest many new ones that you'll want to try.

THE SCROLL

No need to mention what a scroll is—all of you have seen it in use in your neighborhood theatres. Long announcements originally brought the scroll into popularity, but since then it is combined in trick title photography to show clouds floating upwards—stars, futuristic designs, etc.

(Continued on Page 374)

Give economical home movies with Ciné-Kodak Eight

IT'S going to be a popular gift this Christmas—the Ciné-Kodak Eight! This efficient little camera gives a life-time of faithful, versatile movie making at the lowest cost ever!* The "Eight" makes sparklingly clear movies on bright days or dull—even indoors under artificial light. It's a gift that will delight any one.

Your choice of three models—at three low prices. Model 20, fixed-focus, with Kodak Anastigmat *f*.3.5 lens, built-in exposure guide, automatic footage indicator and eye-level finder—only $34.50. Model 25, same as Model 20, equipped, however, with *f*.2.7 lens—price $45. Model 60, de luxe, price $91.50 with carrying case, has *f*.1.9 lens, interchangeable with *f*.4.5 telephoto lens (extra).

If it isn't an Eastman, it isn't a Kodak

**Ciné-Kodak Eight Film is priced at but $2.25 per roll. Each roll makes 20 to 30 newsreel-length scenes. And that's all it costs, because the price of the film includes its finishing.*

EASTMAN KODAK COMPANY, ***Rochester, N. Y.***

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8mm Subjects, 50 ft. reels $1.50
Interesting variety of subjects now available.
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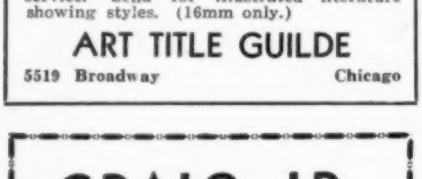

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1031 South Broadway
LOS ANGELES, CALIFORNIA
Represented by Ampro in the East

A HOME-MADE TRICK TITLER

(Continued from Page 372)

The film is given a slight exposure and the title double-exposed normally into the scene.

If you have built your scroll as described in the preceding article, you will have room for a roll of paper 8½" long. I cannot say exactly where this paper may be purchased, but if you call your local telephone company's supply department and tell them your needs they may be able to help you. In my case, the roll of paper was originally intended for the telephone company's teletype machines, and had been replaced by a duplicating type of roll with carbon between two sheets. Fortunately I was given the single roll and have not had to look for more yet.

The roll of paper is put on the broomstick idler and slipped into position with the paper fed from the top of the roll toward the front. Run the paper under the lower steel rod which projects from the side supports, up and over the upper rod, then to the slot in the upper broomstick roller, or takeup spool. Tear the paper to a broad point, stick this point into the slot in the takeup spool and turn the crank on the spool to tighten it. When it is properly threaded, draw the title in the proper place and you are ready to go. There are several things I must mention here before you shoot. The paper is white and, for reversal film, must be coated black before drawing the title. Then, too, you will find the 6"x8" mask a perfect outline for the scroll, and it may be slipped in place in the front holder slots. If you are using positive film for direct developing and projection, leave the scroll paper white and use a white mask.

Photograph like any other title by allowing time to read the first announcement and then, slowly turning the crank, wind the scroll on the takeup spool, which, in turn, slowly raises the title and exposing more and more printing.

Don't just consider the scroll as a means of making long announcements. Remember, its most valuable asset is its ability to provide moving backgrounds for double exposure work. The variations of this device in combination with the others are manifest and need not be mentioned further here.

THE WIPE-OFF AND CHASE-OFF

These tricks are just what their names imply, and are easily accomplished on this titler. To make a simple wipe-off from left to right: put a title in position. Set it and focus it at the proper distance from the camera lens. Determine the WIDTH of the picture area at this point. Then determine the time you wish to allow for the wipe. Find the number of threads per inch in the lead screw and how many inches you have to cover (width of picture) and, allowing the number of frames in the total length of the time allowed for the wipe, you have the number of "operations" on the crank. Then move the crank for each "operation" a distance necessary to make the wipe cover the entire picture in the total number of operations. This sounds complicated but a little thought will show that it isn't a bit that way.

For example, let us say that we are photographing at a distance of 26" from the lens and have, therefore, a picture width of 10". Let us say we want to complete the wipe in two feet of film, or 80 frames. This means that we have to advance the wipe 80 times and over a range of 10", or ⅛" for each operation. Now if our lead screw has 8 threads per inch, this is simple—all we must do is give a complete revolution to each frame (figuring on using stop-motion). But if our screw has 12 threads per inch, we must give more than a complete revolution to each "operation," or exposure of a frame. We figure then on giving the handle one and a half complete revolutions for each single frame, which still advances it the required ⅛ of an inch.

Do not forget that the wipe is started only after sufficient time has been allowed to read the title and that a change in exposure will probably be necessary when changing from normal speed to stop-motion (usually about one stop larger for stop-motion).

The card which composes the wipe is installed in the manner described at the time constructional details were given, and can be of any shape as long as it is large enough to cover the entire picture. Bear in mind, too, that it is advisable to have the lights BETWEEN the wipe-off card and the title.

The chase-off is merely an elaboration of the wipe and consists of first making a wipe as described above, then backing up both the film and the wipe, change the wipe card to the opposite side so that it COVERS the new title at the start and advancing the same way as before, proceed to wipe IN the new title. If you have been careful in your calculations you will have a perfect chase-off.

Of course it is not necessary to use two titles to make chases. A title and a photograph may be combined or, with a little more caution and thought to details, a scene can be chased in fairly accurately by making the title wipe at normal speed and turning the wipe-off handle steadily. Count the number of revolutions of the handle, backwind the film and wipe to the starting point, reverse the wipe card, and remove the title and "insert," so that the camera will shoot completely through the holder

aperture. Focus on the scene desired and, starting in as before, keep the wipe handle going at the same speed and so on. With good luck you will have made that greatest and most desired of all tricks in a 16mm camera—AN ACTION WIPE-OFF!

Just a word of caution here. When running the wipe-off traveller back for a "chase," it is a good idea to run it several turns past where it is to start from, and then reverse the handle and start it back. In other words, when using the wipe, bring the traveler to starting position TOWARD THE DIRECTION IT IS TO TRAVEL. This takes care of any play in the traveler and as long as the mechanism is not backed up this play will have no effect. A little oil on all working parts will tend toward smoothness of operation. Grease is recommended in the holder carriage runway.

TREND OF THE TIMES

Cameraman Dascomb Dies

● Newsreel Cameraman Ed. Brooks Dascomb, of the Paramount Newsreel staff in France, recently died from the effects of a bullet received during the filming of the assassination of King Alexander at Marseilles, France.

The pictures taken by Dascomb were considered one of the greatest newsreel scoops in Film history.

Cinema Exposition

● According to a report of "Lichtbildbuehne," a German trade paper, the German government in co-operation with the German Eastman Kodak Co. will sponsor an International Cinematographic Exposition to be held in Berlin The purpose of this exposition is to show the great progress made by Motion Pictures in all departments. So far 22 foreign countries have already pledged entries of cinematographic interest. So far the U.S. is not represented.

German 16mm Camera

● The well known Zeiss-Ikon Co. of Germany recently perfected a new professional 16mm motion picture camera "MOVIKON," according to foreign trade paper reports. This little handy camera can do everything a professional camera can do. A picture speed of 12, 16, 24 up to 64 frames per second is provided.

It has an adjustable shutter for fades and dissolves. Also a special one frame per turn for stop-motion work. The rewind arrangement for dissolves is something new. The re-wound film does not actually enter into the magazine but into a special space provided, with sufficient protection to prevent any buckling. Focusing direct on film with a special arrangement to replace a piece of matfilm instead of grayback for focusing.

An automatic distance meter is built in. The camera is supplied with a turret comprising a Zeiss Tessar 1,27 15mm; 1,27 20mm; 1,1,4 25mm; 1, 2,8 50-mm; 1, 4 75mm.

The new camera sells around $280, present rate of exchange.

Ceiling Movies

● An enterprising London camera shop announces a sick-room projector for rent. It is a projector that can be put on a table over the patient's bed. Through a 45-degree mirror arrangement the image is projected on the ceiling of the sick room.

The patient is able to view the picture without having to sit up. It is said to have the endorsement of leading London physicians.

Anti-Curler

● Here is a god tip for professionals and amateurs alike that develop their own films. It is always hard to prevent drying flim from curling. Especially film from miniature cameras has this tendency and is hard to cut and place between the glasses of the enlarger.

The following formula will prevent curling and leave your films smooth and flat:

Mix a solution of—100 cc water, 100 cc alcohol, 1 cc glycerin. Pass your films through this solution for several minutes and then hang up to dry.

Plastic Projection

● The "PANTOSCOPEWAND," a new type projection screen in a concave form has been invented and designed by Herr Hecht of Dresden, Germany. This new screen is claimed to give a very plastic effect to all films projected on it.

No special lenses or other accessories are needed in the projection apparati.

No new principles or technical details are given in the announcement of this device.

Amateur Sound

● According to "Cineopse," a French trade paper, more than one thousand French Cinephotographers are already using 16mm cine equipment with sound.

Sound-on-16 clubs are formed all

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The Ideal Gift
● Photo Flood-Spot will be particularly appreciated at Xmas time when it can be used to great advantage by the photographer who wishes to create beautiful, soft, mellow effects — fire-place shots, children playing with their new toys in the shadow of the Xmas tree, etc.
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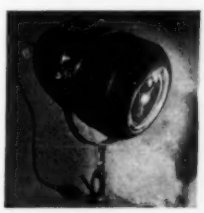
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over their country. They claim that in proportion to its population France has more Cine-Sound-Amateurs than any other country.

Infrograph

● A French steamship line has decided to equip all their transatlantic liners with the Captain Williams fog navigation camera "Infrograph."

Owing to the peculiarity of the Infra-Red rays to penetrate the thickest of fog and mist, the principle was applied to a quick-action camera designed by Capt. Williams.

This fog camera, usually mounted on the bridge of the ship, takes pictures at short intervals of the ship's course.

The camera is connected with an automatic developing device which permits the viewing of the developed negative in 30 seconds.

Collision in the fog, the most dreaded marine disaster, will soon be a thing of the past, thanks to the science of advanced Photography.

Sound-Stage Turn-Table

● "Soyouzkine" is the Russian Hollywood. Everything used there is of soviet manufacturing, including cameras and film. Russia is now actually producing their own Super-Pan-Chromatic film.

One of the largest sound-stages there boasts an enormous turn-table. They claim that it is the only turn-table sound-stage in the world. Great economy in time is said to be obtained through this arrangement. Several sets can be built at a time. Most of the lighting of the sets comes from above the stage turn-table, therefore, it is claimed, effecting additional saving of time in lighting the set.

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Wm. J. Grace
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312 WEST PAGE
DALLAS TEXAS

8mm Pictures Take Honors in 1934 Competition

(Continued from Page 365)

are fresh in the judges' minds, the ratings are set down by the individual judges. The next day the averages are figured out as set down by all of the judges for that picture. None of the judges ever know what ratings have been given by any of the other judges.

Under the classification of Home Movie, Van Dee Sickler of Los Angeles was awarded the $50.00 prize for his picture "Mischief," a 16mm subject in 200 feet. The continuity is evolved around his wife, a Scotch terrier, a cat and a bird. The continuity, titles and photography of this picture were very good.

J. Sherlock of Sydney, Australia, was given the prize for his Scenic picture "The Brook," a 200-foot 16mm subject. It is evident that Sherlock went to great trouble to make this picture. It was based on Tennyson's poem and the scenes were made to fit the poem. This was very evident from the smoothness of the continuity. His photography secured a very high marking.

In the Documentary class Leslie P. Thatcher of Toronto, Canada, was awarded the $50.00 prize. Thatcher was given a silver medal for travel pictures last year. His picture was a 16mm subject in 200 feet. His treatment was commented upon very highly by the judges.

Again this year the ladies were represented among the winners. Miss Roanna W. Hill was awarded the prize for Kodacolor with her 200-foot 16mm sub-

ject "October." This picture was a special delight as Miss Hill had concentrated upon pastel colors as she found them in the woods and fields. Also she brought the human element into her picture very gracefully and entertainingly.

"The Story of Water," a 16mm subject in 200 feet won the prize for H. Demarest of Hackensack, N. J., in the Educational class. This picture was a finely photographed record of water from the ocean to the clouds and back to the ocean again through its various stages. His photography rated high.

Because of the number of pictures entered by doctors the Scientific class was created this year. Under this classification the prize was awarded to M. Abraham Shur of Bronx, N. Y., for his picture "Reconstruction of Nose," made in 16mm Kodacolor. This picture was made with indoor lighting and showed a very consistent photography.

Prize for Travel picture was given to John E. Earl of Los Angeles for his picture "The Traveler." This was a very delightful 16mm subject that carried much entertainment value in addition to its good photographic quality.

It was impossible to complete all of the judging. All of the pictures are now being considered for the equipment prizes. A few of these prizes have been awarded, but in view of the fact that all of them have not been assigned, the announcement of all of the winners will be held up until the January issue.

The January issue will also give the names of those winning honorable mention.

Let's Talk About Lenses

(Continued from Page 367)

suggestion. For that reason, spherical aberration is deliberately **built into** the lens of the portraitor, and in the Cooke Triplet, this is accomplished by adjusting the position of the rear element.

A word of warning, tho—**do not attempt to secure this sort of effect with your own Cooke lenses unless they are specifically so built.** To do so would be to destroy the accuracy of your lenses, and back to the factory they must go! If your Cooke lens has been damaged or if you have reason to believe it is out of adjustment, send it back to the factory, and don't attempt to have anyone else adjust it for you.

Perhaps the most popular type of anastigmat in use at the present time is that of the Zeiss Tessar, sketched in Figure 7. It will be seen that it is very much like the Cooke Triplet except that the

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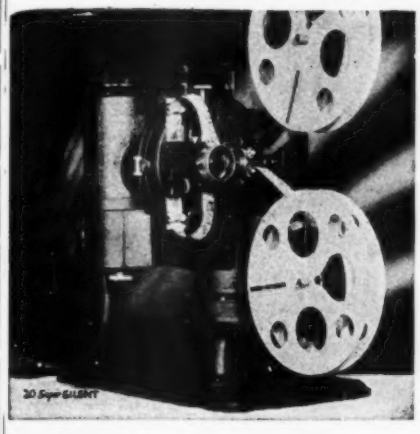
1934's two 16mm Leaders



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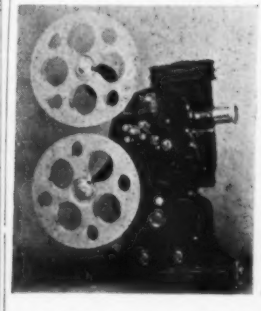

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rear element is a doublet or pair of elements cemented together. Just why this particular type of lens should be more popular than the Cooke Triplet type is something I frankly do not know, unless it could be due to patent troubles or to manufacturing costs. Perhaps the Cooke Triplet has an element which is paraboloidal instead of the less expensive spherical surface, but this is only a guess on my part.

All of the better lenses of today are of the anastigmat type, for the demands for sharper and more precise definition of the image are increasingly insistent. The entire trend in both the still and motion picture fields is toward smaller and smaller negatives, for reasons of film economy. The idea is to get the best possible image on the smallest practical negative and then enlarge the image either on paper or on the motion picture screen.

The trend toward smaller negatives is a healthy one, too, for the smaller are the negatives. the faster lenses may be made which will stay within the bounds of needle-point sharpness of the image. That means pictures may be made under poorer conditions of illumination and the field of photography is widened accordingly. Incidentally, also, the smaller the lens the less expensive it is, for, as I stated in my article on the future of the little 8mm system, flawless small pieces of optical glass are more commonly obtainable than larger ones.

It is interesting to note in connection with lens design progress that we amateur movie makers are very largely responsible for the fact that we have anastigmats today as fast as f/1.9. Altho I do not have such information at my fingertips, I believe that 16mm fans had f/1.9 lenses before the 35mm cameramen had them. This much, however, you yourself have probably observed—about the fastest lens ever used on a still camera making 2¼"x3¼" or larger pictures is an f/4.5. It is possible to get f/2.5 lenses for the new miniature cameras, and f/1.5 lenses are quite common for 16mm movie work. The fastest lens ever made for 16mm work was the f/.99 Dallmeyer, but it was almost "too fast," for altho well corrected for its wide-open use, it did not suit many users when they tried to stop it down for ordinary use.

Now that we have the 8mm film size, tho, perhaps the story of lens speed progress will continue, and it shouldn't be surprising some of these days to open an AMERICAN CINEMATOGRAPHER to find an advertisement of a leading lens maker of an f/.5 lens for 8mm work. And, in the words of Mr. Gosden (Amos of "Amos 'n Andy"), "Ain' **dat** sumpin!"

Next month suppose we talk about wide-angle and telephoto lenses. Perhaps you've observed that somehow you weren't quite satisfied with your movies made with any lens other than the regular focal length, and have wondered why this is. After reading next month's article, perhaps the reason for the apparent distortion of perspective by these lenses will become a bit clearer. See you then.

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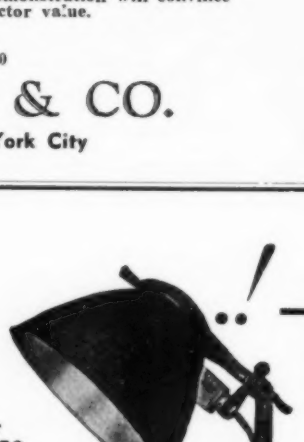

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Fades and Dissolves

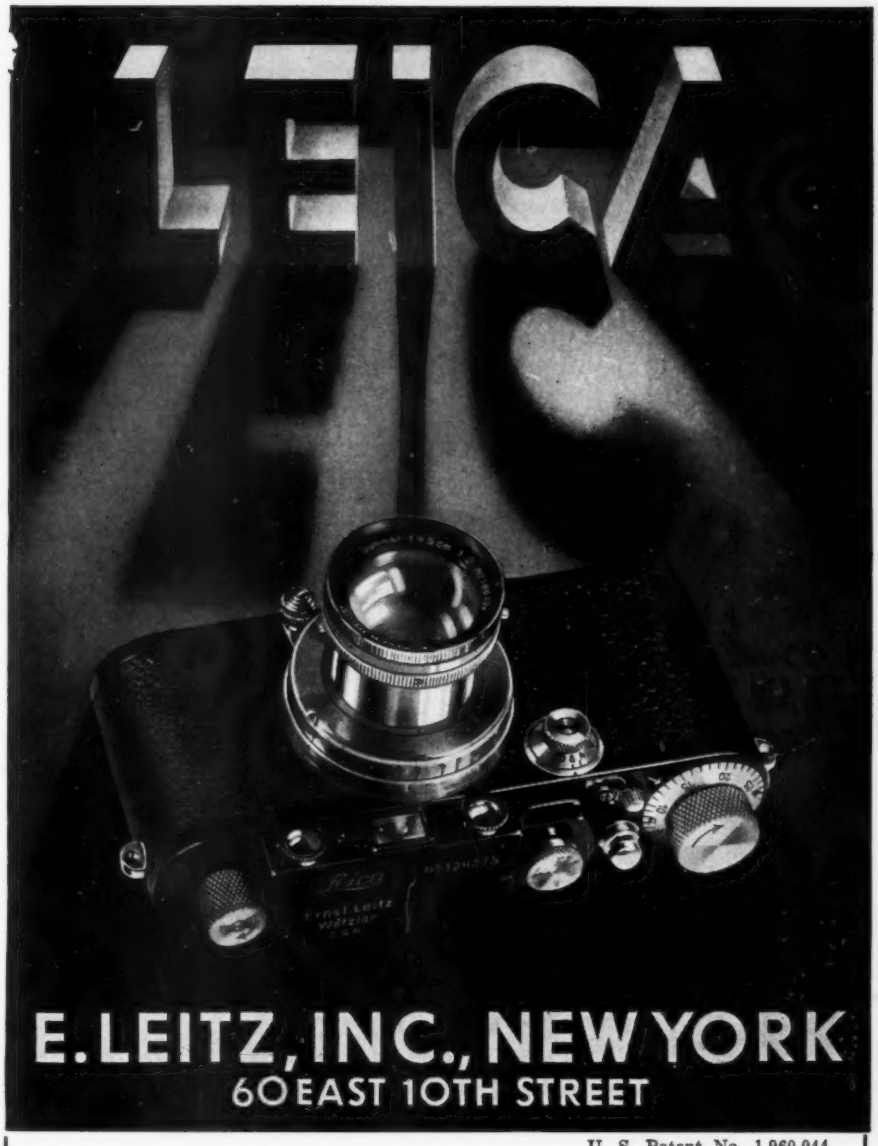
(Continued from Page 364)

only be available to the very fortunate or very patient. A second method is to take the picture of the name-board and afterwards to rewind the film part of the way and re-expose it on a piece of black card close to the camera, in front of which a small quantity of smoke or steam is passed to obscure the card. The result of the double exposure will be to give a name-board across which the steam is seen to pass.

A similar method is adopted in starting on the next scene, it being only necessary to take care that the "smoke" is drifting in the same direction in each of the two scenes. The steam, which is the natural adjunct of the railway, is thus brought into use in the film for the purpose of the "fade out" and "fade in."

It might be thought that ideas of this type are few and with only a limited application. Once the principle is understood, however, adaptations will be discovered. For instance, here are two examples of the "natural" fade—as applied to the cine portraiture of a child. A child behind a newspaper is told to wait for the word "Go!" and then to tear the paper down the middle from the top. The camera is set up, so that an expanse of newspaper only is visible, and is started just before the word is given to "Go." The result is a picture of a newspaper which, as it is torn in two, reveals the impish face of the youngster. All kids love to tear newspaper; but what fun when one is told to do it. A variant of this idea is of a child pulling on a frock or overall. Little more than the head and shoulders should be taken and the camera should be started while the garment is over the child's head and fills the whole of the picture area. As the picture proceeds the tousled head will be seen to emerge from the folds. And the expression will be perfectly natural; for putting on one's own overall or frock is rather an adventure, isn't it!

Such ideas as these require a camera which is still, or nearly so, but a somewhat different effect can be obtained if the camera is moving. The idea is, I suspect, an old one. But if it is well done it is difficult to detect and it is probably for this reason that I have never been conscious of seeing it used professionally. I call it the "swing mix." Suppose that we have two settings, apart from one another, but it is desired that the child or actor is seen to pass directly from one to the other. It is arranged that as the subject moves from the first setting he or she passes fairly close to the camera and across the line of sight. On the approach the camera is panned to follow and is moved faster and faster, the subject moving across the picture space. The scene in the second setting is then taken and this starts with the subject passing across the picture in the same direction while the camera follows and subsequently slows down as the desired arrangement of the picture is reached. When the film is edited the join is made of the two quick panorams, care being taken that the subject is in the same position in the frame both at the end of the first shot and the beginning of the second. The effect on the screen is as though one continuous shot had been made and this will scarcely be noticeable even if there is some difference in the distance of the subject from the camera at the junction of the two films. It is only necessary to take care that there are no obtrusive objects in the background where the films are joined. This method enables the greatest



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advantage to be taken of natural settings even in the simplest of domestic films.

The same idea, perhaps with a slight modification, is useful in story films. Suppose that it is desired to follow a party of people moving from left to right. The camera is swung to follow the party, gaining on them until they are out of the picture. The camera is then moved increasingly faster and comes to rest on another setting. The actors reenter from the left. There are actually two shots, the first ending with the very rapid pan past some near bushes having no distinctive features. The second shot commences with a rapid pan on some similar bushes and the camera comes to rest on the required scene. For the second shot the actors must be hidden or they will be seen in the panoram and an alternative method is to simply start the second shot on the required scene. The effect when the two films are joined is the abrupt ending of the pan, and the actors can then enter from the left without need for camouflage.

So much for "natural" fades and mixes. The subject is a very wide one, for people who go about with wide open eyes. Once again necessity becomes the mother of invention. Good luck in this sideline in the gentle art of **leger de cine.**

Special Effect Lighting for the Amateur

(Continued from Page 368)

as silk, celluloid or ordinary tissue over each of your lamps your film will be improved greatly photographically. The drawback of using diffusers is that they cut the light value of your lights in half, thus necessitating the use of twice the number of lights.

For the ordinary amateur a diffusion lens will not give the same result. To properly use a diffusion lens a complete study of diffusion through optical means is necessary.

Another point in indoor lighting of sets is not to omit offstage lighting. In other words, when a character leaves the set by means of a door he shouldn't go into inky blackness. The room he goes into should show at least a faint light.

A final point to remember in indoor photography is that your characters should dress in colors that contrast with their background and with each other. Often when using a minimum number of lights light clothing gives the best contrast even with a light background.

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3 *10½ to 1 movement with "kick-back." Easy on film.*
4 *High speed mech. re-wind.*
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10 *New type aluminum lamp chimney... cooler, brighter.*
11 *Oversized motor... largest used in any projector.*
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13 *Light in weight... beautiful in appearance.*
14 *Ampro exclusive tilt.*
15 *Price for this Ampro 16 mm projector complete with case. Great value at regular list price, $150.00. Bass price only $99.50. Don't pay more... Don't get less. Order direct from this ad. Your money back after trial if you want it. Full details and Bass Bargaingram 213 free on request. Dealers: Write for details.*

BASS CAMERA COMPANY
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Camera Headquarters for Tourists
*Apologies to Dodge Motors.

PHOTOGRAPHIC ANNUAL

• The 1935 American Annual of Photography has come to our desk.

The Annual has been richly illustrated with representative works from among the leading photographers of the world. A study of these illustrations is in itself a satisfying education in photography.

The text matter is instructive. Among the contributors and the subjects discussed by them are Herbert C. McKay on "Making the Most of Exposure"; C. W. Gibbs on "Focus in Cine Film"; Rudolf vonErhardt, "A Universal Focal Slide Rule"; James C. Kinkaid, "Filters in Press Work"; Fred C. Bowditch, Jr., "Notes on Infra-Red Photography"; Charles W. Seager, "Possibilities with Photoflood Lamps"; Homer S. Powley, "A Standard Darkroom Procedure"; John Lanctot, "The Control of Graininess"; William S. Davis, ""Line and Tone as Expressive Factors in Composition."

These are but a few of the interesting subjects covered in this issue of the Annual. It is published by the American Photographic Publishing Co. in both paper and cloth binding. The cloth binding sells for $2.25 and the paper for $1.50.

16MM NEWS REEL

● According to plans evolved by the Peerless Motion Picture Company of Hollywood, that organization will launch a 16mm News Reel, to be released monthly.

This news reel will in all likelihood be in 400-foot lengths. ..Its reporters will consist of outstanding amateurs throughout the world. The events will be in the nature of feature news events instead of sport news. This means that it will have a longer life and a wider interest.

Wm. J. Seeman, one of the most prominent amateur cameramen on the West coast, will be appointed editor of the newsreel.

Just when the first of these will be launched has not been decided, however, plans are being laid for a release sometime around the first of the year.

OAKLAND SHOWS PRIZE PICTURES

● The Oakland Amateur Movie Club had a showing last month of the AMERICAN CINEMATOGRAPHER 1933 prize winning pictures.

The club made a special event of the occasion and not only had members present, but the meeting was thrown open to friends and dealers throughout the city.

NEW 8MM CLUB

● The newly organized Los Angeles 8-mm club under the direction of Claude W. A. Cadorette and Randolph B. Clardy, winner of the American Cinematographer prize for photography and scenario in the 1933 Amateur Contest, will hold its first meeting the second Tuesday of January at the Bell & Howell auditorium in Hollywood.

Plans for meetings will include instructive talks and criticisms; exchange of film with other eight millimeter clubs; prize contests every two months and a grand yearly contest; a club production each year. Meetings will be held at the Bell & Howell and Eastman Auditoriums.

The yearly fee is established at $3.00. Temporary headquarters of the club are at the home of Cadarette, 233 N. Kenmore Ave., Los Angeles, Calif.

● WANTED ●

Amateur 16mm Cameramen to shoot News, Oddities, Human Interest and other 16mm Subjects for our NEW 16MM CINE NEWS

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FOR SALE—MISCELLANEOUS

TWO USED Powers 35mm projectors complete with Mazda equipment and Cinephor condenser. One Moon enclosed motor-driven rewind. W. Chas. Swett, 705 Hollywood Security Bldg., Hollywood, Calif. HO 5893.

3 400-ft. reels and 3 Humidor Cans., all for $2.25 plus postage. Fotoshop, Inc., 136 W. 32nd St., New York City. T

LIKE NEW—Sound Moviola Model UC, price $450.00. Also new H.C.E. free-head and legs for Bell & Howell, Eyemo or DeVry portable cameras, $75.00 complete. Hollywood Camera Exchange, 1600 Cahuenga Blvd., Hollywood, Calif.

IN GOOD condition, Bell & Howell Camera 120-degree, three lenses, four 400-ft. magazines, tripod, carrying case, complete—$550. Hollywood Camera Exchange, 1600 N. Cahuenga Blvd., Hollywood, Calif.

LIKE NEW, Mitchell Camera, silenced Academy aperture, Pan Tachar lenses, free head tripod, 1000-ft. magazines, complete—$2000. Hollywood Camera Exchange, 1600 N. Cahuenga Blvd., Hollywood, Calif.

LIKE NEW, Educational Camera Blimp, gear'ed free head, follow focus device and three-wheel dolly. Cost $1250. Our special, $500. Hollywood Camera Exchange, 1600 N. Cahuenga Blvd., Hollywood, Calif.

LIKE NEW, Artreeves portable double sound recording outfit with Bell & Howell Silenced camera, complete in every detail. A real bargain, price $3500. Price without camera, $2500. Hollywood Camera Exchange, 1600 N. Cahuenga Blvd., Hollywood, Calif. Cable address: HOCAMEX.

WANTED

WANTED TO RENT—Photo dark room in Hollywood for still work. Call GRanite 4640 after 8 P.M.

WANTED—A used Bell & Howell Camera, with regular standard B & H Tripod, and set of 4 lenses—40mm, 50mm, 75mm and one 4-inch lens. This camera need not have a cine-motor, or Matte box. Box 243, c/o American Cinematographer. T

WILL PAY CASH FOR: Bell & Howell. Mitchell, Akeley or DeBrie Cameras, lenses, motors, parts and accessories. Motion Picture Camera Supply, Inc., 723 7th Ave., New York, New York.

WANTED—170-degree shutter Bell & Howell, any model. Quote lowest cash price. Irving Braun, 5125 N. Lotus Ave., Chicago, Ill.

WANTED—Number 1 Eastman Stereopticon camera. Harry Perry, OXford 1908.

WANTED—Developer Tank for 3¼x4¼ cut film. Box 246, American Cinematographer, 6331 Hollywood Blvd., Hollywood, Calif.

MOTION Picture and Still Cameras, all types Lenses, Finders, Tripod Heads, Leica or Contax Cameras. Cash for bargains. Camera Supply Ltd., 1515 Cahuenga Blvd., Hollywood, Calif.

MISCELLANEOUS

WILL TRADE 1932 Buick Sport Coupe for DeBrie or Bell & Howell 35mm camera. Will assume. Fred Mayer, 624 North Plymouth Blvd., Apt. 7, Hollywood. Phone GL 8426.

WE BUY—sell or rent everything necessary for the making — taking — or showing of motion pictures. Sound or Silent — 35mm and 16mm. We specialize in equipping expeditions. Ruby Camera Exchange, 729 7th Ave,. New York City. T

SIX B & H 1000-ft. magazines; two sets Mitchell tripod legs; Mitchell Camera in perfect condition; one Duplex printer and other miscellaneous equipment. Box 245, c/o American Cinematographer.

EXCHANGE

TARGET Pistols, Rifles, Shotguns, Revolvers, Microscopes, Binoculars, Telescopes—accepted in trade at liberal allowances on any photographic equipment, motion picture or "still." Authorized representatives of Leitz, Zeiss, Eastman, Victor, R.C.A., Bell & Howell, and every leading manufacturer. National Camera Exchange, Established in 1914, 5 So. 5th St., Minneapolis, Minn.

FOR SALE—CAMERAS

CINE KODAK B f/1.9 with Kodacolor, never used, $75.00. Model A f/3.5 in new condition with motor, $35.00. Watson McAlexander, 616 S. 85th St., Birmingham, Ala.

BEFORE buying film, equipment, parts, get our prices on new and used. Trades accepted. Film library catalogue. Mogull Bros., 1933-A, Boston Rd., N. Y. C.

AKELEY Camera No. 280; chromed pressure plate, with tripod, 4 extra 200-ft. magazines, standard matched Zeiss lenses, 1 B & L 6" f4.5 lens and matched finder, slow motion attachment and 2 cases. Perfect condition, $850. RABSONS MUSIC & CAMERA CO., INC., 1373 6th Ave., New York City.

35mm APPARATUS at give-away prices, all in good operating condition. Universal 200-ft. camera, f3.5 lens, case, $40.00. DeVry, f3.5 lens, $40.00. Professional step printer, $30.00. Universal 200-ft. camera, 40mm, f1.9; 50mm, f3.5; 90mm, f4.5; 6 magazines, case and Universal tripod, $90.00. George Horst, 1924 Green st., Philadelphia, Pa.

MITCHELL STEEL GEAR CAMERA, perfect condition, all standard Studio equipment, Astro Pan Tachar lenses, net $1450. Camera Supply Co., Ltd., 1515 No. Cahuenga Blvd., Hollywood, Calif.

BELL & HOWELL Camera No. 910. Beautiful Fear Movement, practically unused, Academy aperture and ground glass offset turret, ideal for single system installation. Phone or write for price. Camera Supply Co., Ltd., 1515 No. Cahuenga Blvd., Hollywood, Calif.

LEICA MANUAL

One of the most complete books on LEICA photography is now in preparation. This book which is scheduled to appear about the first of the year will contain many chapters written by experts and amateurs who are using the LEICA Camera professionally and as a hobby. The entire book will be a practical working manual containing information which can be used by the beginner or the advanced professional worker. The LEICA MANUAL is being written entirely by LEICA workers in the United States and is being published in this country by Willard D. Morgan and Henry M. Lester, independently of the Leitz Company. The editors of this book feel that they are presenting something quite original and valuable for all who are interested in miniature camera photography.

TRICKS GADGETS

Another Contest

Here's how it works. Send us in tricks you have done in filming with your 8mm, 9½mm or 16mm camera. Explain them to us so that we can explain them to others in the pages of American Cinematographer.
For every one we publish you will be entitled to your choice of one of the prizes listed below.

By Gadgets we mean little pieces of equipment you have built, designed or devised. Equipment that works. Little gadgets you have added to your camera, projector or otherwise. For instance, we heard of one fellow who built a splicer out of a mouse-trap . . . that's a gadget.

What kind of gadgets have you made . . . what sort of tricks do you do with your camera or equipment? If necessary send us a rough sketch or a snap shot of your equipment if it will help describe it better and quicker.

Here's Your Chance to Win Equipment or Film

Frequently we have published what might be termed tricks. Such as making distorted effects by pouring sweet-oil over a glass in front of the film. Others have been published from time to time.

In the way of gadgets we have reported many things from the building of a complete 16mm camera by amateurs down to making their own reels.

What Have You Done?

Here are the prizes . . . you may make your choice of any one of them.

Beltipod
Filter Holder
Choice of Filter
Splicer
Half-Dozen 16mm Reels
Half-Dozen 16mm Cans
3 Reels and 3 Cans
100-ft. Roll of 16mm Pan Film
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